A Component of British Columbia's
Land Use Strategy

DOC
BC
L2116
D:L26
2000
c.3

BRITISH
COLUMBIA

Lakes District Land and Resource Management Plan

LRMP
Lakes District

LEGISLATIVE LIBRARY
VICTORIA, BC V8V 1X4

LEGISLATIVE LIBRARY OF BRITISH COLUMBIA
3 3298 00240 6412

Lakes District Land and Resource Management Plan

Inside cover photo taken by G. Hoehne

Canadian Cataloguing in Publication Data

Main entry under title:

Lakes District land and resource management plan

Includes bibliographical references: p.131

ISBN 0-7726-4139-0

1. Land use - British Columbia – Burns Lake Region - Planning. 2. Land use - Government policy - British Columbia – Burns Lake. 3. Regional planning - British Columbia - Burns Lake Region. 4. Natural resources - British Columbia – Burns Lake Region - Management. I. British Columbia. Ministry of Forests.

HD319.B7L34 2000333.7'09711'82C00-960046-9

File: 31100-25-04

Dear Reader:

Re: Approval and Direction to Implement the Lakes District Land and Resource Management Plan

On behalf of Cabinet, we are pleased to confirm final approval of the Lakes District Land and Resource Management Plan (LRMP), and convey it to all participating ministries for implementation.

This document will assist government agencies by providing policy direction on the management of important land and resources in the Plan Area. The Prince Rupert Interagency Management Committee is now responsible for ensuring that the Lakes District LRMP is implemented, monitored and reviewed on a regular basis.

We wish to thank members of the LRMP table and provincial agency representatives for their considerable dedication and effort in developing this plan for the management of land and resources in the Lakes District LRMP area. The ability of participants to achieve agreement on land and resource management has contributed, in a significant way, to the Provincial Land Use Strategy. We encourage table members to continue to participate in plan monitoring and implementation processes, as identified in the Plan.

Jim Doyle
Minister of Forests

D Miller
Dan Miller
Minister of Energy and Mines

Joan Sawicki
Joan Sawicki
Minister of Environment, Lands & Parks

I Waddell
Ian Waddell
Minister of Small Business, Tourism & Culture

100-05576/

Table of Contents

EXECUTIVE SUMMARY I
CHAPTER 1 Process and Background 1
1.1 LRMP PROCESS 1
1.2 LRMP VISION AND PRINCIPLES 4
1.3 SCOPE OF PLAN 6
1.4 ORGANIZATION OF PLAN 7
CHAPTER 2 The Lakes District 9
2.1 PHYSICAL DESCRIPTION 9
2.2 HISTORICAL LAND & RESOURCE USE 11
2.3 COMMUNITIES & ECONOMIC ACTIVITY 13
2.4 ABORIGINAL PEOPLES 15
2.5 ISSUES AND INTERESTS 17
CHAPTER 3 General Resource Management 19
3.1 GENERAL RESOURCE MANAGEMENT 19
3.2 ECONOMIC DIRECTION 20
3.3 SOCIAL DIRECTION 42
3.4 ENVIRONMENTAL DIRECTION 52
CHAPTER 4 Resource Management Zone Direction 68
4.1 LAND USE DESIGNATION 68
4.2 AGRICULTURE/SETTLEMENT ZONE 68
4.3 GENERAL RESOURCE MANAGEMENT ZONE 73
4.4 SPECIAL RESOURCE MANAGEMENT ZONE 78
4.5 MINERAL/WILDLIFE MANAGEMENT ZONE 98
4.6 NEW PROTECTION ZONE 100
CHAPTER 5 Socio-Economic/Environmental Assessment 112
5.1 INTRODUCTION 112
5.2 SOCIO-ECONOMIC RESOURCE ANALYSIS 114
5.3 ENVIRONMENTAL RESOURCE ANALYSIS 120
5.4 CONCLUSIONS 123
CHAPTER 6 Plan Management and Administration 125
6.1 PLAN ADOPTION 125
6.2 PLAN IMPLEMENTATION 125
6.3 SUBSEQUENT LAND USE PLANNING 127
6.4 PLAN MONITORING 128
6.5 ANNUAL PUBLIC REPORT 129
6.6 PLAN INTERPRETATION AND DISPUTE RESOLUTION 129
6.7 PLAN AMENDMENT 130
BIBLIOGRAPHY 132
GLOSSARY 135
APPENDIX 1 Lakes District LRMP Participants 152
APPENDIX 2 Abridged List of Issues and Interests 154
APPENDIX 3 Chelaslie Caribou Migration Corridor Mngmnt Strategy 157
APPENDIX 4 Interim Mountain Pine Beetle Mngmnt Strategy 172
APPENDIX 5 Visual Landscape Mngmnt Strategy 178
APPENDIX 6 Protected Areas 181
APPENDIX 7 Resource and Recreation Use Guide for Protected Areas 184
APPENDIX 8 Recommended Terms of Reference for the Lakes Monitoring Committee 189
APPENDIX 9 Landscape Unit RLUPS Excerpt 191
APPENDIX 10 Consesnus Policy Recommendations 192
APPENDIX 11 Socio-economic/Environmental asseeement Summary 194
APPENDIX 12 Major Issues Summary 202

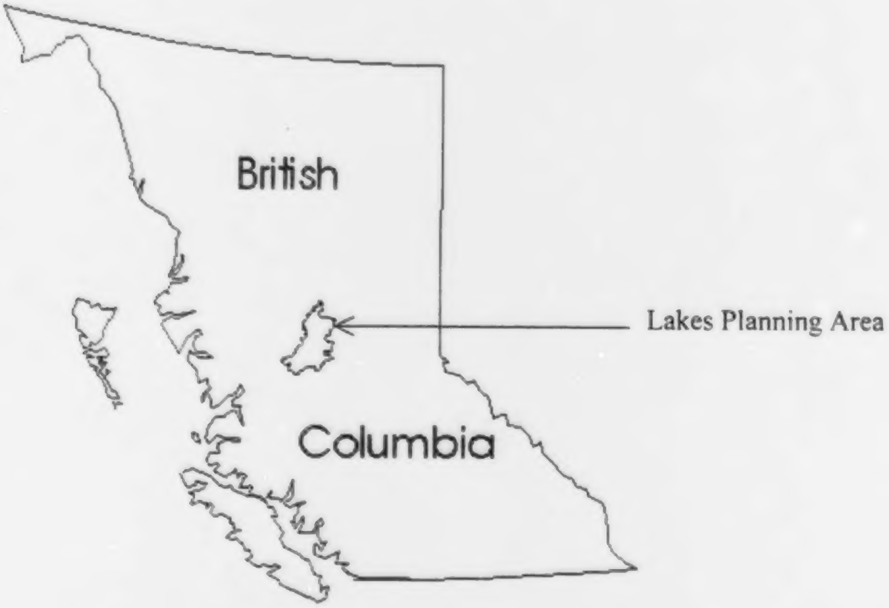
List of Tables

TABLE 1 SPECIAL RESOURCE MANAGEMENT SUB-ZONES 79
TABLE 2 BACKCOUNTRY LAKES 82
TABLE 3 RECREATION AREAS 88
TABLE 4 RE-DESIGNATION OF TWEEDSMUIR RECREATION AREA 108
TABLE 5 NEW PROTECTED AREAS SUMMARY 109
TABLE 6 LAND USE ZONES AS % OF TSA (NET OF WATER) 114
TABLE 7 LAND USE ZONES AS % OF PLANNING AREA (NET OF WATER) 114

List of Figures

Figures 2-11 are located following Chapter 4

FIGURE 1 LAKES PLANNING AREA
FIGURE 2 BIOGEOCLIMATIC ECOSECTIONS
FIGURE 3 VISUAL INVENTORY
FIGURE 4 BIOLOGICAL ECOSYSTEM NETWORK
FIGURE 5 RESOURCE MANAGEMENT ZONES
FIGURE 6 INTENSIVE TIMBER MANAGEMENT AREAS SUB-ZONE
FIGURE 7 BACK COUNTRY LAKES SUB-ZONE
FIGURE 8 RECREATION EMPHASIS SUB-ZONE
FIGURE 9 CARIBOU MIGRATION CORRIDOR SUB-ZONE
FIGURE 10 UNGULATE WINTER HABITAT SUB-ZONE
FIGURE 11 BABINE LAKE ECOLOGICAL RESERVE PROPOSAL AND BABINE LAKE BOATING SITES PROTECTED AREA



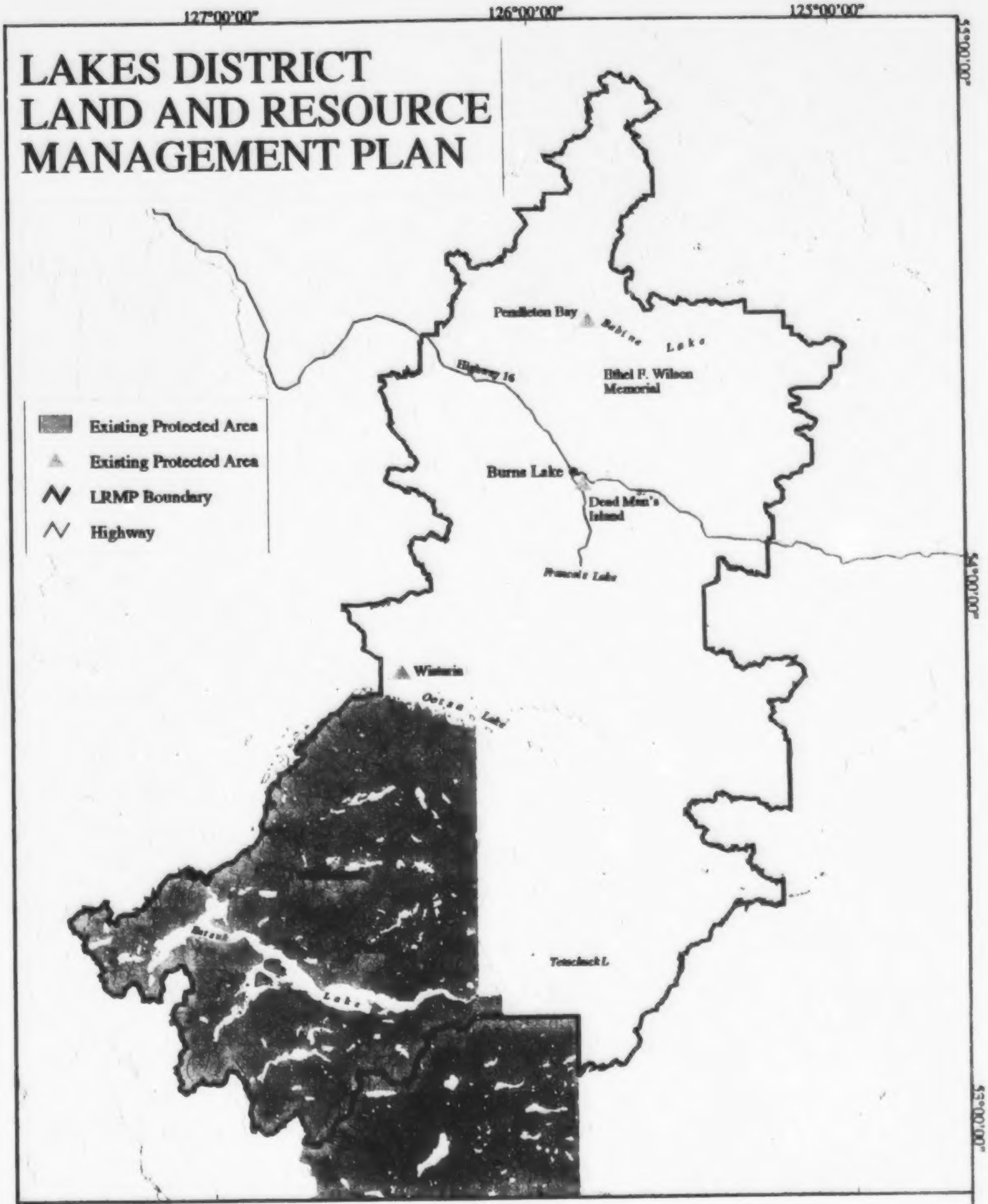

127°00'00"
126°00'00"
125°00'00"
55°00'00"
54°00'00"
53°00'00"
LAKES DISTRICT
LAND AND RESOURCE
MANAGEMENT PLAN
Pendleton Bay
Babine Lake
Highway 16
Ethel F. Wilson Memorial
Burns Lake
Dead Man's Island
Francois Lake
Wistaria
Ootsa Lake
Eutsuk Lake
Tetachuck L.
▨ Existing Protected Area
▲ Existing Protected Area
N LRMP Boundary
N Highway

FIGURE 1

Lakes Planning Area

Albers Equal Area Conic NAD83
Produced by Land Use Coordination Office

0 5 10 15 20 25
Kilometres

November 12, 1999

BRITISH COLUMBIA

Executive Summary

The Lakes District Land and Resource Management Planning (LRMP) process provides broad direction for the sustainable use of Crown land and resources. The process was launched in April 1994 with the formation of the Lakes Resource Council (the planning table). The table concluded its meetings in November 1997 with a consensus on the Land Use Recommendation. The government of British Columbia has now approved the recommendations as prepared by the planning table.

The Lakes District LRMP will be implemented by government agencies including the provincial ministries of Forests; Environment, Lands and Parks; and Energy and Mines. This plan will guide a wide variety of resource management programs and activities, such as agriculture and forest development planning under the Forest Practices Code. The components of the plan that guide forest operational planning will also be incorporated into a 'Higher Level Plan' under the Forest Practices Code.

The Planning Area

The Lakes District LRMP planning area covers 1.58 million hectares and includes all Crown lands within the Lakes Forest District of northwestern British Columbia. The planning area encompasses the Village of Burns Lake, as well as the traditional territories of the Carrier peoples, including the Wet'suwet'en, Ulkatcho, Cheslatta, Nat'oot'en, Stellat'en and Yekooche First Nations.

The Planning Table

The Lakes District LRMP is the result of the hard work and dedication of a core group of public and government representatives who worked together for over three years to develop a common vision of future land use for the area. Respect and recognition of different viewpoints were key operating principles at the planning table. This co-operative approach will extend to an open annual review that will monitor and report on implementation of the plan. The term of the Lakes District LRMP is expected to be 10 years, with an anticipated review in 2007. A monitoring committee will be formed to assist in plan review and implementation.

The Lakes Resource Council included participation by a core group of 23 local citizens representing the full range of community interests including: community associations, mining, agriculture, fisheries, forestry, human resources, tourism, recreation, wildlife, heritage and culture, environment and conservation, and small community interests. They were supported by an interagency planning team of 14 government representatives. Broader, more informal public participation was also undertaken periodically throughout the planning process.

First Nations

First Nations indicated early in the process that they felt they could not directly participate in the LRMP process. Efforts to maintain communication on all aspects of consultation with First Nations were managed by the Ministry of Forests district aboriginal liaison officer and will continue as the approved plan is implemented. No written objections to the Land Use Recommendation were received from First Nations, although some have expressed concern that proposed protected areas may affect their ability to negotiate or be part of economic development opportunities. First Nations have also expressed an eagerness to pursue resource planning issues through the landscape unit planning process.

Local Government

Local government was not officially represented on the LRMP table. Presentations were given to the Village of Burns Lake and the Regional District during the initiation of the LRMP process. In June 1997 presentations of the LRMP draft recommendations were made to local governments, with overall positive and supportive feedback.

Plan Highlights

The Lakes District LRMP provides objectives and strategies for the management of:

- fish and wildlife;
- forestry;
- mining;
- recreation;
- environment;
- heritage and culture;
- agriculture;
- tourism;
- access; and
- human resources.

The Lakes Land Use Recommendation provides 'General Management Direction' for values occurring in the entire plan area. It divides the area into five resource management zones (RMZ). Each RMZ contains specific resource values and management objectives, which set out the types of activities (e.g. recreation, timber harvesting, trapping, etc.) and intensity of use permitted in that zone. The four types of zones are:

- General RMZ (34.1 per cent of the planning area) – manages with specific strategies to integrate a wide variety of resource values.
- Agriculture/Settlement RMZ (8.3 per cent of the planning area) – manages lands consistently with the historic pattern of settlement and agriculture.
- Special RMZ (24 per cent of the planning area) – manages for the conservation of one or more resource values such as habitat, scenery and recreation, while still enabling resource development activities.
- Mineral/Wildlife Zone (0.6 per cent of the planning area) – a portion of the former Tweedsmuir Recreation Area which allows for mineral development and exploration while providing careful consideration of wildlife values. This zone will be managed jointly by BC Parks and the Ministry of Energy and Mines.
- Protected Areas (33 per cent of the planning area – includes 5.8 per cent new protected areas) – protects key natural, cultural, heritage or recreational values

New Protected Areas

Existing protected areas in the planning area account for about 456,600 hectares. Under the Lakes District LRMP, four new protected areas will be created, protecting an additional 92,176 hectares. These new areas include:

- Entiako (70,400 hectares)
- Babine Lake sites (76 hectares)
- Sutherland (12,900 hectares)
- Uncha Mountain/Red Hills (8,800 hectares)

Protected Area Highlights

Tweedsmuir Recreation Area – Government staff recommended that 7,250-hectare of the Tweedsmuir Recreation Area be upgraded to a Class A park.. The Tweedsmuir area has high wildlife and recreation values, including flora, fossils and viewscapes. It provides critical calving and migration areas for the 400-500 member Tweedsmuir-Entiako caribou herd. It also has excellent grizzly bear habitat and supports an intact predator-prey system in association with the adjacent park.

Entiako – The planning table recommended protection of the Entiako area, with the objective of maintaining important caribou habitat as well as managing mountain pine beetle infestations that are threatening forest health in the district. Government is providing funding to battle the severe beetle infestations in the Entiako area and plans to designate the area as a Class A park once an ecosystem based management plan has been completed which meets the objectives of the zone.

Forestry Considerations

The Lakes District LRMP identified Intensive Timber Management Areas, being a sub-zone of the General Resource Management Zone, as a key component in the maintenance and enhancement of forest development opportunities in the planning area. This approach to intensive timber management provides opportunities to enhance forest productivity while maintaining the capacity of local ecosystems to sustain long-term forest development activities. While LRMPs do not have a mandate to establish the annual allowable cut, approval of the LRMP includes an assurance that there will be no impact on timber supply greater than those predicted in the LRMP analysis, which indicates impacts will be within acceptable limits.

Forest resource development is to be undertaken in accordance with the provisions of the Forest Practices Code of BC Act and its regulations (the code). The code and other applicable legislation (e.g. the Forest Act and Range Act) contain management provisions to direct resource managers in the management and conservation of forest and range resource values in the planning area.

Mineral Considerations

The LRMP confirms that energy and mineral exploration and development are acceptable uses of the land, outside of protected areas.

Two high value mineral areas (the 5,165-hectares Lindquist and 4,262-hectares Chikamin areas) have been excluded from the boundaries of the former Tweedsmuir recreation area. These areas will remain as Crown land under a section 16, Land Act Map Reserve to protect the areas from alienation. These areas are designated as the Mineral/Wildlife zone.

It is the general management intent of the Lakes District LRMP to maintain opportunities and access for energy and mineral exploration, development and transportation. Energy and mineral exploration and development activities will be integrated with other resource uses and activities, and conducted in an environmentally responsible manner. Exploration and development of energy and mineral resources will be permitted within the regulatory framework for surface and sub-surface resources, and practices will be consistent with the resource management objectives for each resource management zone within the plan.

CHAPTER 1

Process and Background

1.1 LRMP Process

The Land and Resource Management Planning (LRMP) process is part of British Columbia's Provincial Land Use Strategy. The role of the LRMP process is to evaluate the full range of resource interests and values and make strategic land use recommendations. LRMP recommendations apply to all resource management sectors and agencies operating on Crown land in the plan area.

Public participation and consensus decision making by local citizens are the cornerstones of the Lakes LRMP process. To achieve consensus, all the people involved have to reach general agreement on all matters before a decision is made. When consensus is not reached a dispute resolution process agreed to by participants is followed. The following nine stage planning process outlines the steps used to develop, implement, monitor and review the final land use recommendations of the Lakes District LRMP:

Stage 1 - Preliminary organization

The Lakes District LRMP process was launched in April 1994, at which time the Resource Council was formed. A Terms of Reference, including the broad goals for the planning process, was agreed upon in June of 1994.

Stage 2 - Identifying the Issues & Gathering Information

The Resource Council identified the issues and gathered background information from resource users, government agencies and the public. Thirteen categories of resource values were identified.

Stage 3 - Defining the Resource Management Zones

Five Resource Management Zone designations were defined and assigned to the landscape based on land and resource characteristics and management issues. The zones are Agriculture/Settlement, General Resource Management, Special Resource Management, Mineral/Wildlife and Protection.

Stage 4 - Developing the Objectives and Strategies

General, district-wide, objectives and strategies were defined for each of the identified resource values. Specific objectives and strategies were developed for each Resource Management Zone. These objectives and strategies form the core of the LRMP document and provide land and resource management direction within the planning area.

Stage 5 - Determining Community Impacts

An independent Socio-Economic and Environmental Assessment was carried out to examine the impact of recommended land use and resource management strategies on the environment, economy, and communities, as compared to current management practices.

Step 6 - Draft Report & Public Review

A preliminary draft of the land and resource management recommendation was circulated to the public for review and comment. Over several weeks, Resource Council members and planning staff met with community groups and members of the public to explain the Plan and receive feedback.

Step 7 - Consensus Management Direction

New information and issues identified through the public review process were considered and appropriate responses incorporated into the final draft of the Plan. After final review by the Resource Council, the final draft became the "Lakes District Land and Resource Management Direction Report – December 1997"

Step 8 - Government Approval

The Land and Resource Management Direction Report was submitted to senior levels of government and, ultimately, Cabinet for approval. Endorsement by cabinet of the resource council's management direction report resulted in this LRMP. This LRMP is a statement of corporate policy direction of the government of British Columbia for the planning area.

Step 9 - Plan Implementation, Monitoring and Review

This LRMP is in effect for a period of 10 years commencing the date of cabinet approval with an anticipated review starting two years prior to expiry. A monitoring committee will assist in plan review and implementation. Monitoring, amendment and review procedures are established within this document to ensure that concerns are heard and that the spirit of the Plan is being applied.

Plan Participants

The development of the final management direction report was driven by the Resource Council, a group of about 23 local citizens representing the full range of community interests including: community associations, mining, agriculture, fisheries, forestry, human resources, tourism, recreation, wildlife, heritage and culture, environment and conservation and small community interests (Appendix 1).

The Resource Council was structured in such a way as to provide a forum for discussion on all interests and values in the Lakes District planning area, and to prevent domination of discussions by individual interest groups. The Resource Council operated in conjunction with government agencies and conducted meetings with a professional facilitator. The Ministry of Forests provided funding and staff to assist in the process. Participation protocol is outlined in the LRMP terms of reference.

The task of the Resource Council was to reach a consensus agreement that reconciles the needs and demands of the entire community. Consensus decision making requires the full cooperation, commitment, patience and goodwill of everyone concerned.

Following this principal was at times difficult for the participants, but it has resulted in a plan that can be supported broadly within the community.

An Interagency Planning Team (IPT) provided technical support throughout the process. They supplied information and analysis to the Resource Council and reviewed the recommended plan for conformity with legislative and government policy requirements. The IPT included resource managers from the provincial government agencies responsible for forests, environment, Crown lands, parks, agriculture, tourism, small business, minerals and energy resources, aboriginal affairs and transportation.

The Prince Rupert Interagency Management Committee (IAMC), composed of senior regional managers from various provincial ministries and agencies in the region, oversaw the entire process and provided strategic guidance to the Resource Council as needed. The IAMC plays a key role in overseeing monitoring and implementing the final plan.

Community involvement has been integral to the Lakes District LRMP process. Meetings have been open to the public throughout the entire process. Newspaper articles describing the process and its progress have run periodically and there have been mailouts (monthly during the development of the direction report) to an extensive list of interested community members. At the outset of the process, a small office was established in the village of Burns Lake to introduce the public to the LRMP process. Resource Council members have staffed information booths and made presentations explaining their sectoral interests to the public. The Resource Council members have also maintained ongoing communication with their constituencies.

Involvement of Aboriginal Peoples

Aboriginal peoples were invited, during the early stages of the planning process, to identify their values, interests and concerns, and to participate on the Resource Council. Representatives of aboriginal communities declined these invitations due to concerns over infringement of treaty rights and the lack of human and financial resources to adequately participate. A subsequent invitation - based on a participation model incorporating traditional decision-making structures (i.e. the "potlatch") and developed both to maintain a government to government relationship between aboriginal peoples and the Province, and minimize the time and resource commitments required to participate - was also declined. First Nations were included in regular mailouts in order to keep them informed of Plan progress.

Although aboriginal peoples were not formally represented at the LRMP table, their concerns with respect to archaeological, cultural and heritage values were communicated to the Resource Council (including cross-cultural workshops and presentations). These values have been recognized on a day-to-day basis, since 1991, through operational planning protocols between the Province (specifically the Lakes, Bulkley-Cassiar, and Morice Forest Districts) and the Office of the Wet'suwet'en Hereditary Chiefs. Further, the Bulkley Watershed Landscape Unit Pilot Project

(Ministry of Forests / Wet'suwet'en First Nation, 1996-ongoing) holds promise as a model for future co-operation with aboriginal peoples in identification of land and resource management concerns at the strategic planning level.

Of special note are the concerns of the Ulkatcho First Nation regarding protected areas. Approximately seventy per cent of Ulkatcho traditional territories fall within existing parks (i.e., Tweedsmuir) or new protected areas (i.e., Entiako) in the province. The Ulkatcho are concerned over constraints these protected areas may place on both traditional use activities and commercial development opportunities. Consequently, they approached the Province and relevant planning tables with their concerns. From the perspective of the Lakes District LRMP, the traditional use and commercial activities proposed by the Ulkatcho for the Entiako area are generally not in conflict with protection objectives and can be addressed in the course of protected areas planning and management.

The Province of British Columbia has a legal obligation to avoid infringement of Aboriginal rights or to future treaty negotiations in areas where resource management activities are proposed. LRMP recommendations are put forward without prejudice to Aboriginal rights.

1.2 LRMP Vision and Principles

The Lakes District LRMP process has been guided by a vision statement set forth in the Terms of Reference document:

The vision of this planning process is to produce a Land and Resource Management Plan that will:

- serve as a land use strategy for Crown lands within the Lakes Forest District;
- be the result of comprehensive land use planning;
- provide a forum for participation by the general public, aboriginal groups and government that is based on consensus and;
- result in planned resource use that embraces the principals of sustainable development.

To achieve its vision, the Resource Council endorsed a number of principles in its Terms of Reference as the basis for all discussions and decisions made throughout the planning process. These principles, stated below, focused on ensuring that all resource values are recognized in land use decisions, and that the interests of local people are represented in the Plan.

1. *The preparation of an LRMP for the lakes planning area will be consistent with the Statement of Principles and Process for Land and Resource Management Planning published by the Province of British Columbia (1993). In addition, the following principles and objectives are endorsed.*
2. *Natural resources should be managed to provide for the economic, environmental, social and spiritual well-being of all British Columbians through successive generations.*

3. *Land uses in the lakes planning area should be balanced to provide sustainable, long-term benefits to the people in the planning area, while recognizing the needs of the province as a whole.*
4. *Resource management activities must recognize the value of aesthetics, biodiversity, fisheries, recreation, tourism, wildlife, and general environmental health.*
5. *All resource values must be incorporated in the LRMP process to ensure land use and resource management decisions are based on a comprehensive assessment of resource values.*
6. *Participants in the planning process must strive to develop a plan which optimizes the quality of life for the people of the planning area.*
7. *People in the lakes planning area can contribute to the resolution of global issues. The Plan should therefore accommodate global concerns where appropriate.*
8. *The full range of community interests and perspectives will be sought in order to develop a fair, wise, stable and efficient plan (see Appendix 2).*
9. *The broader public will have a meaningful role in reviewing the work of the Resource Council and in providing the Council with advice and direction. The planning process will be full, fair, and open. Effective communication of the work of the Resource Council is important.*
10. *To assemble and use the best available biophysical and socio-economic information in the development of the Plan. If information proves inadequate to address a resource issue, plan preparation will continue and the final plan will identify further information needs.*
11. *The Resource Council, government, and aboriginal representatives will strive for consensus in the development of the Plan. When consensus cannot be reached, areas of disagreement will be documented and handled through the dispute resolution process.*
12. *The Plan will be guided by Provincial and Regional plans.*
13. *The integration of other planning processes will be respected by the Resource Council. Other plans will be considered within the LRMP process and recommendations may be made to the appropriate planning staff. The boundary areas of the lakes planning area with other planning areas will receive careful consideration in planning to promote coherent planning across such boundaries.*
14. *To provide a mechanism for ensuring that the final plan will be implemented, monitored and updated as required.*
15. *To make every effort to complete a Consensus Management Direction Report or Options Report before April 16, 1996 (this represents a two year time frame starting from the formation of a Resource Council on April 16th, 1994).*

16. *The LRMP is to provide strategic direction for resource management at the Forest District level through the development of resource management zones as defined by the Forest Practices Code.*

On the basis of the above statements of vision and principles, participants agreed to strive for a plan which optimizes the quality of life for the people of the planning area while recognizing all the resource issues and interests that are attached to the land.

1.3 Scope of Plan

The Lakes LRMP planning area encompasses 1,580,000 ha in the Lakes Forest District of Northwestern BC, and includes the village of Burns Lake. The plan area includes North Tweedsmuir Park (438,620 ha.) and the Tweedsmuir Recreation Area (16,692 ha.), which together with some small pieces of existing parks comprise a total of 456,662 ha. The existing protected areas account for approximately 29% of the landbase.

Although a number of the Plan's objectives rely on environmental and economic contributions from the region's private land holdings, the mandate of the resource council was limited to preparing management direction for Crown lands in the Lakes TSA and the Tweedsmuir Recreation Area. The mandate did not include the modifications of the boundaries and/or management of the other existing protected areas.

Being approved and adopted at the Cabinet level, the Lakes District LRMP provides strategic direction to all resource management activities within the planning area for the ten year period following approval. The LRMP represents the corporate policy direction of the British Columbia government. Responsibilities and mechanisms for plan management and administration (including provisions for plan adoption, implementation, monitoring and reporting, interpretation, dispute resolution and plan amendment) are identified in Chapter 6.

Government may establish appropriate resource management zones or objectives from the LRMP as a "higher level plan," as defined by the Forest Practices Code of British Columbia Act and regulations. Any operational level planning of forest uses, as required under the FPC, must be consistent with the approved higher level plan. Objectives for non-forest land and resource activities not addressed through the FPC become policies or guidelines for other provincial agencies.

All land and resource management activities are subject to legislation, policies and regulations for Crown land and resource management. Land and resource management activities and programs within the Lakes District planning area occur within a legislative framework of over 40 provincial and federal statutes and associated regulations. Provincial statutes include, but are not limited to: the *Land Act*, the *Wildlife Act*, the *Forest Act*, the *Forest Practices Code of BC Act*, the *Agricultural Land Commission Act*, the *Heritage Conservation Act*, and the *Water Act*. The *Fisheries Act* is a relevant federal statute. Local governments are empowered under the *Municipal Act* to plan and regulate the use and development of private land. The Lakes District LRMP does not affect legislative and policy mandates, but rather, provides guidance in their application. In addition, all initiatives recommended by this plan are subject to available funding.

1.4 Organization of Plan

The plan is divided into six chapters plus supplementary information, which includes a glossary of terms, a list of references, and a number of appendices. Chapters one and two provide an introduction to the planning process and area. Chapters three and four, attempt to reconcile the diverse demands of many sectors within the limited land base of the Lakes District planning area. This is accomplished through General Resource Management Direction (applicable to the entire planning are) and Resource Management Zone Direction (specific to each of four Resource management Zones). Chapters five and six provide an evaluation of plan impacts and administrative procedures.

The chapters dealing with resource management direction (chapters 3 and 4) should be taken together to fully understand the intent and spirit of the plan. A resource user or manager concerned with recreation, for example, would potentially consult general resource management direction on district recreation and visual resources, and resource management zone direction for the Special Resource Management Zone, Backcountry Lakes and Recreation Emphasis sub-zones.

The objectives and strategies that are found in chapters 3 and 4 are intended to guide the sustainable use of provincial Crown Land and resources within the Lakes District planning area over the long term. The goal is to ensure the health of the community, the natural resources and the natural environment within the planning area. Biodiversity, sustainability and stewardship of the land and natural resources are central concepts of this Plan.

Lakes District LRMP Document

Chapter 1 - Background
Describes the general sequence of the sub-regional planning process, identifies the main objectives, describes the scope and principles of the Plan and explains the organization of the plan document.

Chapter 2 - The Lakes District
Describes the primary biophysical and socio-economic characteristics of the planning area, including a summary of the Carrier First Nations and a description of environmental, social and economic resource values and associated issues that the Lakes District LRMP seeks to address.

Chapter 3 - General Resource Management Direction
Contains general resource management objectives and strategies, which apply across all zones, to guide future management of economic, social and environmental values.

Chapter 4 - Resource Management Zone Direction
Defines five resource management zones for the District and contains resource management objectives and strategies specific to each zone.

Chapter 5 - Socio-Economic/Environmental Assessment
Describes the approach used to estimate the social, economic and environmental effects, and summarizes those estimates for a number of resource values.

Chapter 6 - Plan Management and Administration
Provides direction on a range of measures respecting Plan adoption, implementation, monitoring, dispute resolution, amendment and review.

Supplementary Information

Glossary of Terms

A glossary of terms is provided at the end of the report to help provide the public with a consistent interpretation of Plan terminology and intent.

References

A list of documents both pertinent to and created by the Lakes District LRMP process is provided for referencing purposes.

Appendices

Key informational and implementational documents are provided for quick reference and more detailed interpretation of management direction.

Appendix 1: Lakes District LRMP Participants

Appendix 2: Abridged List of Issues and Interests

Appendix 3: Chelaslie Caribou Migration Corridor Management Strategy

Appendix 4: Interim Mountain Pine Beetle Management Strategy

Appendix 5: Visual Landscape Management Strategy

Appendix 6: Protected Areas

Appendix 7: Resource and Recreation Use Guidelines for Protected Areas

Appendix 8: Recommended Lakes District Monitoring Committee Terms of Reference

Appendix 9: Landscape Unit Boundary, Biodiversity Emphasis, and Planning Priority Recommendations

Appendix 10: Consensus Policy Recommendations

Appendix 11: Socio-Economic/Environmental Assessment Summary Tables

Appendix 12: Major Issues Summary

CHAPTER 2

The Lakes District

2.1 Physical Description

The Lakes District Land and Resource Management planning area encompasses 1.58 million hectares of land in the north central interior of British Columbia. The planning area boundaries follow the boundaries of the Lakes Forest District (which includes Tweedsmuir Provincial Park and Recreation Area). It extends from north of Babine Lake, to the Entiako River and Tweedsmuir Provincial Park in the south. Approximately twenty-nine percent of the total planning area (438,620 hectares) lies within Tweedsmuir Provincial Park and Recreation Area (16,692 hectares).

The Lakes District planning area lies along the western edge of British Columbia's interior plateau. The landscape is characterized by gently rolling uplands, abundant wetlands and many lakes, ranging from small kettle lakes to vast water bodies. Almost 9% of the planning area (approximately 142,000hectares) is covered by lakes. Babine Lake, Francois Lake and the Nechako Reservoir (Ootsa, Knewstubb and Tetachuk Lakes) are the largest lakes and the most significant physical features in the planning area. These long, linear lakes follow valley bottoms that were gouged by glacial activities during the last ice age.

The winter climate can be quite severe. Long, cold winters with heavy snowfalls are characteristic. Summers are generally warm and dry. Average annual precipitation is about 45 centimetres or 18 inches.

Ecosection classification describes the terrain and landforms of an area. Ecosections represent areas with similar climate, topography and vegetation - areas of similar ecosystems. These classifications are useful land management tools because management strategies which respect natural processes are typically modelled on ecosystem structures and functions. Ecosection representation has been a key consideration in assessing areas for protected area status.

Five ecosections are represented in the Lakes District planning area (Figure 2): the Bulkley Basin, the Babine Uplands, the Nazko Uplands, the Nechako Uplands and the Kitimat Ranges.

- **The Bulkley Basin Ecosection** is a broad, gently rolling lowland of the Fraser Plateau. It covers most of the central portion of the planning area, and represents over half (52%)of the land within the planning area. The area is divided by a number of long linear lakes, most notably Francois and Ootsa Lakes, within the Nechako, Endako and Bulkley River valleys. Seral white spruce and lodgepole pine are the most common forest habitats. Fish and wildlife are abundant. Bears, ungulates and fur bearers are widespread. The Chelaslie area in the south, is a critical caribou migration corridor. Much of the basin, particularly the valley bottoms, has been logged or cleared for pasture and settlement areas. An extensive roadway network provides access throughout the ecosection. This ecosection covers 1.4 million hectares of the province, with less that one percent currently protected. The Regional Protected Areas team considers this ecosection to be significantly under-represented in existing protected areas.

- **The Babine Uplands Ecosection** covers the northern portions of the planning area. It accounts for almost 30% of the planning area. The Babine Uplands is part of the Nechako Plateau and is characterized by rolling upland terrain with low ridges. There are numerous small lakes and several very large lakes, including Babine Lake which is the largest natural freshwater lake in the province. Babine Lake drains northwest into the Skeena River system. Several other large lakes drain southeast into the Fraser River. Large and small mammals are abundant. The large lakes provide an important fishery for trout, char, steelhead and kokanee. Lodgepole pine and white spruce are the dominant species. There has been extensive logging activity throughout this ecosection. Provincially, the Babine Uplands occupy 1.05 million hectares of land. Of that total area, 0.03% is currently protected provincially.

- A small corner in the southeast portion of the planning area lies within the **Nazko Upland Ecosection**. It represents about 5% of the planning area. The Nazko Upland is characterized by gently rolling plateaus and broad river valleys flowing north into the Nechako River system. This ecosection contains several large man-made lakes which were created in the mid 1950's by the Nechako River diversion at the Kenney Dam. Because of frequent wildfires in the past, there is a mosaic of forest ages, and old forests are relatively uncommon, except at higher elevations. There is a wide range of wildlife throughout the area. The area included in the Lakes District planning area provides critical winter range for the Tweedsmuir Entiako caribou herd. Other significant species include trumpeter swans, grizzly bear, black bear, moose and fisher. A large variety of lake and stream habitats support a diverse selection of fish species. Provincially the Nazko Uplands ecosection is 2 million hectares in size of which 3.5% is currently protected..

- The **Nechako Uplands Ecosection** covers most of the southern portion of the planning area. It represents about 7% of the planning area. It is mostly flat to gently rolling terrain, underlain by lava flows of shield volcanoes. Several long linear lakes have high recreation values. Extensive Sub-Boreal Spruce zone (SBS) forests are composed of lodgepole pine, white spruce and subalpine fir. The Tweedsmuir - Entiako caribou herd use the area as summer and winter range and as a migration corridor. There has been logging activity throughout the ecosection. The entire Nechako Uplands Ecosection is 995,000 hectares. Over half of this ecosection (56.34%) is protected within Tweedsmuir Park.

- Approximately 90,000 ha of Tweedsmuir Park is in the leeward portion of the **Kitimat Ranges Ecosection**. This represents about 6% of the planning area. These areas are characterized by massive rounded granite mountains with steep slopes. The valley floors are characterized by recent fluvial floodplain deposits and saturated organic materials. Glacial outwash materials are found in the larger valleys. Warmer, leeward forests within the Engelmann Spruce-Subalpine Fir zone

(ESSF) are found in the eastern reaches of the Kitimat Ranges. The area is characterized by relatively dry summers and high winter snow falls which prevent soil freezing. This areas has a drier, more continental climate than most other areas of the ecosection. Subalpine fir and mountain hemlock forests are well represented, providing summer range and calving habitat for the Tweedsmuir-Entiako caribou herd. Large lakes are also characteristic of this area and support a provincially significant rainbow trout fishery. The Kitimat Ranges ecosection is 3,475,500 ha in size with 15% of that protected provincially.

Biogeoclimatic zones are another, more detailed, classification system, based on sub-regional climate, vegetation and site characteristics. Four biogeoclimatic zones are found within the Lakes District planning area (not including Tweedsmuir Park).

- The **Sub-Boreal Spruce (SBS) zone** is located throughout the planning area, mainly in valley bottoms up to 1,300 metres elevation. About 85% of the planning area falls within the SBS zone.
- High elevation plateaus (between 850 and 1,300 metres elevation) in the southern reaches of the planning area below Tetachuck Lake are generally classified as **Sub-Boreal Pine-Spruce (SBPS) zone.** These account for about 5% of the planning area.
- Pockets of **Engelmann Spruce-Subalpine Fir (ESSF)** forests are found at elevations between 1,300 and 2,100 metres in the northern and eastern regions of the planning area. These account for about 8% of the planning area.
- Less than 1% of the land area falls within the **Alpine Tundra (AT***)* zone, at elevations above 2,100 metres.

The Sub-boreal Spruce zone (SBS) covers most of the planning area. Lodgepole pine is the dominant species in this part of the SBS zone. Moderately dry climate and a history of frequent wildfires have created a mosaic of relatively young lodgepole pine forests. These would eventually develop into white spruce dominated forests if they remained undisturbed long enough to reach the climax or mature forest stage. Mature spruce forests (over 250 years) are relatively uncommon in the Lakes District planning area because the forests are usually destroyed by fire before they reach the climax stage.

The pine forests generally have sparse herb and shrub layers and abundant terrestrial lichens interspersed with wet sedge meadows. Forest productivity is generally moderate to poor. Spruce forests are frequently associated with riparian areas, valley bottoms and lower slopes. These are the major timber producing areas in the planning area. Other tree species found in the planning area include sub-alpine fir, Douglas-fir, black spruce, birch, cottonwood and aspen.

2.2 Historical Land & Resource Use

The Lakes District possesses a rich abundance and diversity of natural resources. The people of the Lakes District have always relied heavily on the land and its resources.

These resources hold the key to the future economic and social well-being of this community. This is as true now as it was 100 years ago.

The Carrier aboriginal peoples are the original inhabitants of the Lakes District. They have lived off the land and its resources since the last ice age. The Carrier people practiced a traditional lifestyle based on fishing, hunting, trapping and gathering - taking sustenance from the land. They have made extensive use of the entire area for thousands of years.

In more recent history, the European peoples introduced fur trading and agriculture. The first European settlers arrived in the late 19th century during the construction of the Collins Overland Telegraph Line to Alaska. The second wave of settlers arrived in 1914 when two track building crews (from the east at Jasper and from the west at Prince Rupert) placed the final spike in the Grand Trunk Pacific Railway near Burns Lake.

Until completion of the Grand Trunk Pacific Railway (later to become part of the C.N.R.) development of the Burns Lake area was extremely limited. A few settlers walked in from the head of navigation at Hazelton, from the Caribou district, or from Bella Coola to the Ootsa lake area to establish homesteads - their output was devoted largely to meeting their own needs. With the advent of rail service, commercial seed production (forage seeds) became the main export. Today the major agricultural "export" product is beef cattle, destined primarily for Alberta feed lots. A small but growing export market is developing around exotic species such as Emus, Fallow deer, Ostriches and Llamas. Other types of agricultural endeavour are still based on local and regional market needs.

The construction of the Grand Trunk Pacific also generated demand for railway ties and bridge timbers. During this period tie-hacking became a major component of the local economy. Utilization of the area's forests did not occur on a significant scale until World War II. Post war demand encouraged the establishment of countless small portable sawmills and, for a time, small-scale entrepreneurs thrived. As forest management became more complex and the industry more highly integrated, timber rights held by small local mills were slowly bought out by more efficient large stationary sawmill complexes. A recent example of industry rationalization in order to remain competitive with respect to wood supply, wood cost, and fluctuating markets is the buy-out of Decker Lake Forest Products. In the foreseeable future the cultivation of new wood products and markets is most likely to fuel future growth in this industry.

Construction of the rail line also precipitated development of several mining operations in northwestern BC. In the Lakes District, this included the Silver Fox mine on Taltapin Lake which shipped ore to the Trail smelter in the early 1920's and spurred mineral exploration south of Whitesail Lake. Several small operations were developed on Chikamin Mountain in the mid-1930's. In 1953, perlite (an industrial mineral used in construction and horticultural applications) was mined on the south shore of Francois Lake.

Construction of the Kenney Dam on the Nechako River attracted more people to the area in the mid-1950s. This massive hydroelectric development project created significant economic opportunities in the coastal communities of Prince Rupert and Kitimat through construction jobs and ongoing employment at the Alcan aluminum smelter in Kitimat. However, the Lakes District has received very little economic benefit from this development while paying a considerable price in terms of displacement of aboriginal peoples and lost valley bottom lands that were important for agriculture, forestry and wildlife uses.

2.3 Communities & Economic Activity[1]

About 7,700 people live in the Lakes District planning area today. About one third of the population (2,500 people) are of aboriginal descent.

Although the district experienced some population decline during the 1980's, there are indications that a pattern of modest growth has resumed in the 1990's. The population is expected to grow by about 1.6 percent over the next few years. Most of this will be due to natural population growth, though in-migration does appear to be increasing during the 1990's. However, a single large industrial project could alter these population projections considerably.

The Village of Burns Lake is the largest community in the area with a population of about 2,050. Most of the population growth in the district has occurred within the village which grew by 18% between 1991 and 1995. It is the supply and distribution centre for a number of smaller rural communities situated along the Highway 16 corridor and in the area between Francois and Ootsa Lakes.

The retail sector in Burns Lake is quite robust. A host of supply, service and transportation related businesses serve the local sawmills and the community. The social infrastructure includes the Burns Lake & District Hospital, six primary/elementary schools and two high schools, a campus of the College of New Caledonia, provincial government social services office, a library and a museum.

Many people in the Lakes District lead a rural lifestyle that includes some combination of mixed farming, ranching, logging, trapping and guiding. These activities are often practiced as part-time ventures or subsistence activities. The residents of those communities purchase most of their supplies and services in Burns Lake.

South of Burns Lake and a twenty minute ferry ride across Francois Lake is a collection of rural communities including Southbank, Grassy Plains, Wistaria, Takysie, Cheslatta and Ootsa. This area is home to approximately 2,000 people.

---

[1] Assumptions underlying the above statistical profile are detailed in the document: *Socio-Economic and Environmental Base Case for the Lakes District Draft LRMP*, G. Holman, et al, December, 1996.

Other agricultural communities in the planning area include Palling, Colleymount and Noralee. Rural residential use of lakeshore areas is scattered throughout the district including Babine, Decker, Burns, Tchesinkut, Francois, Uncha, Takysie and Ootsa Lakes.

Nine First Nations communities have reserve lands and traditional territory in the Lakes District. Those communities are Burns Lake, Lake Babine, Broman Lake, Cheslatta, Skin-Tyee, Nee tahi Buhn, Ulkatcho, Stellako, and Yekooche. Total membership of these bands is approximately 2,500 people. Of that number, about 1,500 people live on 58 reserves covering 6,000 hectares. The remaining 1,000 people live off reserve within the Lakes District.

The forestry industry anchors the economy of the Lakes District, supporting 30% to 40% of total employment (800 to 900 jobs) in the planning area. The public sector is the second largest employer, contributing 30% of total employment, followed by tourism (10%), agriculture and ranching (about 7%), mining (1%) and other services (12%). The combined labour force of the district was about 2,700 people in 1991. Approximately 9.6% of the adult population receive unemployment insurance and social assistance benefits - somewhat lower than the provincial average of 14%.

The forest industry has changed considerably over the past 3 decades. Major changes include: (1) consolidation of many small local sawmills into a few large centrally located wood processing facilities, leading to a gradual reduction in local milling activity, (2) increased production characterized by dramatic increases in harvest rates in the 1960's and 1970's, and (3) improvements in wages, benefits and working conditions associated with timber processing facilities. Almost 30% of the annual timber harvest from the Lakes District now flows to mills outside of the district. Babine Forest Products is now the largest employer in the district.

Most of the employment gains over the last 20 years have been in government services, health and social services, and in the tourism and hospitality sectors. The forest sector, however, will continue to be a strong economic force in the area for the foreseeable future. Growth in the forestry sector appears to be shifting into non-traditional areas such as value added processing, silviculture, and consulting services.

Employment in tourism activities has grown by about 11% over the past decade and modest growth is likely to continue in the foreseeable future. Tourism and recreation opportunities are abundant in the Lakes District. This industry offers promise for future economic diversification. There are fifteen guide-outfitting territories and 12 lodges/resorts/guest ranches operating in the District. Angling, hunting, camping, boating, snow-mobiling and cross-country skiing are common recreational pursuits.

Cattle ranching is the primary agricultural enterprise in the Lakes District. Slow growth is predicted for this sector in the short term, due to market conditions, and in the long term due to climatic and biophysical constraints. Agriculture does, however, provide full time and supplementary employment to many people and is a source of economic diversity to the region.

Trapping provides seasonal income to 90 licensed trappers in the area. This is also an important cultural activity for many First Nations communities. One large First Nations commercial sockeye fishing license was issued in the District in 1996. It is expected that this license will continue in the future.

Though no mines are presently found within District boundaries, mines operating just outside the district occur in rock formations which extend into the Lakes area. Mineral exploration in the Lakes District has been hampered by a thick blanket of glacial deposits which covers most of the landbase; however, new forestry roads in combination with improvements in technology and geological interpretation are gradually piercing this blanket. Recent discoveries of gold and silver south of Ootsa Lake and advanced exploration on a molybdenum deposit in the northern tip of the district are indications of future potential for increased mineral exploration and development.

2.4 Aboriginal Peoples

Aboriginal peoples have used the planning area for thousands of years. Aboriginal village sites are located on major waterways, land benches and riparian areas, and major trade routes between the coast and interior. Aboriginal people have traditionally harvested numerous varieties of plants, fish and wildlife - including all types of salmon. Harvesting of natural resources occurs throughout the year, but predominantly in the summer and fall seasons, with significant amounts of vegetation and wildlife preserved for later consumption. These activities continue in modern times, through both traditional and non-traditional institutions (i.e., the Nat'oot'en and Wet'suwet'en are currently formally involved in the Skeena fisheries with the Department of Fisheries and Oceans).

European settlement followed the fur trade and the missionaries in the mid-1800's. Settlement activity eventually included development of the telegraph trail and part of the western portion of the transcontinental railway in 1913. Aboriginal people shared local resources with the newcomers and guided them through their traditional territories where the migrants eventually established permanent settlements. Unlike the rest of Canada, when British Columbia joined Confederation, no treaties were undertaken before the settlers arrived.

Traditional Territories

Traditional territories of the Carrier peoples (including Burns Lake, Cheslatta, Nat'oot'en (Lake Babine), Nadleh Whut'en, Nee Tahi Bun, Skin Tyee, Stellat'en, Tl'azt'en, Ulkatchot'en, Wet'suwet'en, and Yekooche) exist throughout the planning area. The Nat'oot'en, Wet'suwet'en, and the Carrier-Sekani Tribal Council (who represent Nadleh Whut'en, Stellat'en, Tl'azt'en, and Wet'suwet'en First Nation Indian bands under the *Indian Act*) are at various stages of tripartite treaty negotiations with Canada and British Columbia.

Much of the southern part of the planning area, which includes the lands which the various groups within the Carrier Nation claim as their traditional territories, was flooded in the early 1950s. The water diversion was required for the construction of the Kenny Dam to provide electricity for the Kemano facility in Kitimat in 1952. Many individuals lost their personal belongings as some families who were in their traditional territories received little or no notice that they had to move. Consequently, most all of the people were dislocated and almost all were relocated to various Indian reserves created by the Department of Indian and Northern Affairs. Since that time, compensation for their losses has become the basis for the establishment of the Cheslatta Redevelopment Project.

The Ulkatcho claim that approximately sixty per cent of their traditional territories fall within the Entiako and Tweedsmuir Park areas.

Through the Department of Indian and Northern Affairs, several bands may acquire legal status as individual and separate "Indian bands" and "Indian reserves," according to the *Indian Act*.

Commerce

The Burns Lake Native Development Corporation is a legal entity which jointly involves the Burns Lake Band, Cheslatta Carrier Nation, Lake Babine Nation, Nee Tahi Buhn, Skin Tyee, and Wet'suwet'en First Nation. It oversees several commercial companies with ventures in contracting for road construction, small scale salvage, trucking, logging, and silviculture. It also provides loans for small businesses and has been successful in employing local people.

Almost all of the aboriginal groups are involved in economic development. Such endeavours include the salvage and utilization of flooded timber within the Nechako Reservoir, known as the Nechako Salvage Project; mountain pine beetle salvage; as woodlot licensees; milling; trucking and recreation trail rehabilitation.

Population

Population figures for aboriginal groups (Burns Lake, Cheslatta, Nat'oot'en, Nee Tahi Buhn, Skin Tyee, Wet'suwet'en) residing in the District indicate a total of approximately 2,500 individuals, about one third of the Lakes' general population. Those aboriginal peoples (Nadleh Whuten, Nat'oot'en, Stellat'en, Tl'azt'en, Wet'suwet'en, Yekooche, and Ulkatcho) residing outside the planning area and having traditional territories within the Lakes planning area total approximately 2,775.

Operational and Strategic Planning Protocols

Since 1991, an operational planning protocol exists between the Province and the Office of the Wet'suwet'en. Its purpose is to identify culturally significant areas or "traditional use sites" which may be impacted, prior to any forest development taking place. Further, obtaining the input of aboriginal peoples in the landscape unit planning process in ongoing. It holds promise as a model for future co-operation with aboriginal peoples in identification of land and resource management concerns at the strategic planning level.

Legal Issues

The current understanding of aboriginal rights (as legally defined through the courts) is that these rights were not extinguished prior to 1871, when the Province joined Confederation. The courts have stated that aboriginal peoples continue to have pre-existing rights to undefined portions of land within traditional territories; a right of self-regulation exercisable through their own institutions (i.e., the hereditary system); and a right to preserve and enhance their social, political, cultural, linguistic and spiritual identity. These rights do not, however, extend to ownership and jurisdiction over land and resources. The legal definition of aboriginal rights is an ongoing process and is likely to evolve over time. The provincial government is to avoid unjustifiable infringement on constitutionally protected aboriginal rights in areas where resource management activities are proposed.

2.5 Issues and Interests

Early in the LRMP process, the Resource Council applied itself to the task of identifying the full range of issues and interests that affect the land, its resources and the people living within the planning area. The Resource Council is composed of community citizens who represent distinct groups, or sectors, within the Lakes District community. Each of the eleven sectors that were represented on the Resource Council identified issues and interests specific to their sector group (see Appendix 1 for a complete list of Resource Council members). Key issues and interests identified by the LRMP Resource Council are outlined in Appendix 2, Abridged List of Issues and Interests. These issues and interests fall into 12 main resource value categories:

- **integrated resource management**
- **environment and biodiversity**
- **wildlife and fisheries**
- **jobs, communities & quality of life**
- **agriculture and range**
- **timber harvesting, silviculture and forest health**
- **mining and energy**
- **trapping and guiding**
- **recreation and tourism**
- **culture and heritage**
- **access management**
- **traditional native land use**

In addition, ten major issues that would require multi-stakeholder conflict resolution to achieve consensus were identified (see Appendix 12, Major Issues Summary). These issues were attached to the first widely distributed draft of the LRMP. The resulting comment of the Resource Council, government representatives, and members of the public were discussed at subsequent LRMP meetings. Consensus resolutions were achieved on nine of the ten major issues. The one issue where a consensus resolution was not achieved (Tweedsmuir Recreation Area) was forwarded to IAMC for recommendation. All resolutions and recommendations have been incorporated into this final LRMP document.

Determining how land use and resource management practices contribute to both the creation and resolution of land and resource management issues, both now and in the future, was a core activity of the Resource Council in subsequent stages of the LRMP process. Descriptions of resource values and issues in the Lakes District can be found in Chapter 3 and 4 of the Plan, General Resource Management Direction, immediately preceding management objectives and strategies for each resource and zone.

CHAPTER 3

General Resource Management Direction

3.1 General Resource Management

Given that the mandate of the Resource Council did not include the modification of the boundaries and/or management of existing park areas, and that a lack of inventory data for Tweedsmuir Park exists, the Lakes District Land and Resource Management Plan contains land use objectives and strategies only for Crown lands in an area corresponding with the Lakes Forest District and the area previously known as the Tweedsmuir Recreation Area.

The Lakes District LRMP incorporates a broad range of resource development and conservation values. The general management intent of the LRMP is to balance environmental, economic and social benefits flowing from those resource values. As it is unrealistic to try to satisfy all resource values in all areas of the District, resource management emphasis varies according to the distribution, availability, and sensitivity of those values. This approach is based on an integrated resource management philosophy which strategically identifies concentrations of key resource values and provides management direction appropriate to those values.

The following objectives and strategies provide broad, district-wide, direction to agencies for managing environmental, social and economic resources, as well as guidance in the development of their individual and inter-agency program priorities. Although the objectives and management strategies of Chapter 3 apply to all resource management zones, all resource management must be consistent with zone specific direction. Given that certain resource activities (e.g., logging and mining) are not permitted in provincial parks, some of the objectives and strategies will only apply to Crown land outside of protected areas. Appropriate objectives and strategies, particularly those associated with environmental, recreation and tourism values, will be incorporated in the management of parks (see Chapter 4).

Some of the strategies provide a desirable or plausible resource production output, resource allocation amount, or a timeline within which the strategy is intended to be initiated or completed. It is intended that the management direction will be implemented in a timely manner, recognizing and considering the stated objectives, strategies and goals for other resource values.

The recommendations contained here, along with resource management zone direction provided in Chapter 4, form the core recommendations of the Plan. These objectives and strategies provide direction to local level planning covering Crown lands within the Planning Area. A glossary is provided to promote consistent interpretation of terminology used to describe objectives and strategies.

Implementation of LRMP objectives and strategies is intended to occur over time. Monitoring of the implementation strategy will be overseen by the Prince Rupert IAMC. Involvement of the Lakes District Monitoring Committee in implementation and monitoring will be consistent with the provisions of Chapter 6.

The LRMP Resource Council was involved in recommending Landscape Unit boundaries and Biodiversity Emphasis Options for inclusion in the Regional Landscape Unit Planning Strategy (RLUPS). The council focused on ensuring that cumulative impacts between the LRMP and Landscape Unit Biodiversity management were minimized. The RLUPS included a schedule for finalizing landscape unit boundaries and basic biodiversity objectives. Since the RLUPS was approved on October 31, 1997, the Lakes Forest District Manager and the Designated Environment Official have approved landscape unit boundaries for the purpose of establishing biodiversity emphasis options for the district. The Biodiversity Emphasis Options shown in Appendix 9 contains a selection of the Lakes Forest District component of the Regional Landscape Unit Planning Strategy.

3.2 Economic Direction

Timber Resources

Resource Values and Issues

The current Allowable Annual Cut (AAC) of 1,500,000 m^3 for the Lakes Forest District was first established on January 1, 1981. AAC determinations since 1981 have maintained this level, including the recent 1996 decision by the Chief Forester. The Lakes Timber Supply Area (TSA) (1,123,667 ha) and the Lakes District planning area (approximately 1,580,000 ha) differ in that the TSA excludes the northern portion of Tweedsmuir Provincial Park and Tweedsmuir Recreation Area (approximately 456,600 ha). Seventy seven percent (77%) of the TSA is considered potentially productive forest land. Of this, approximately 57% or 634,500 ha was defined as suitable for timber harvesting during the last AAC determination. Sixty seven percent (67%) of available timber volume is currently allocated to Forest Licenses, twenty nine percent (29%) to the Small Business Forest Enterprise Program, and three and a half percent (3.5%) to Woodlot Licenses.

The most abundant commercial species is pine (occurring on 77% of the harvesting land base). Spruce is the secondary species (occurring on 21% of the harvesting land base). Sub-Alpine fir is the third most abundant species, generally occurring at higher elevations on cooler moister growing sites. The current age class distribution indicates that over 64% of commercial species on the harvesting land base are over 100 years of age.

Emerging issues include forest health, forest growth and yield, and timber utilization. Several decades of fire suppression has resulted in what is a relatively "old" age-class profile, one consequence being increased susceptibility of the timber resource to Mountain Pine Beetle infestation. Recent growth and yield research suggests that managed second growth stands are growing significantly more quickly than naturally regenerating stands. Innovative arrangements (e.g., stewardship agreements, stumpage allowances) with small forestry operators are being piloted at the District level to reduce losses of salvageable "dead-and-down" timber resources.

Timber resource concerns focus on aspects of maintaining a sustainable and stable wood supply by addressing such issues as forest health, forest growth and yield, silvicultural practices and timber utilization (with emphasis on reducing unsalvageable losses).

General Management Intent

It is the general management intent of the Lakes District LRMP to provide a secure forest land base in order to maintain a stable, sustainable timber supply. In the short term, timber supply stability will be tested through development of 20 year "look-ahead" planning. In addition, opportunities to optimize timber supply will be explored within the framework of a detailed timber management strategy.

Opportunities and access for timber harvesting, silviculture and forest health management will be maintained. Forestry activities will be integrated with other resource uses and activities, and conducted in an environmentally responsible manner. Timber harvesting, silviculture and forest health management will be permitted within the existing regulatory framework, including the Forest Practices Code, and practices will be consistent with the resource management objectives for each resource management zone within this Plan.

Timber planning and harvesting will be based on principles of ecosystem planning as applied to geographic areas called Landscape Units. Harvesting patterns, block sizes and site practices will be designed to achieve a variety of forest resource management objectives (Chapters 3 & 4).

Timber Objectives	Management Strategies
1. Maintain a sustainable, secure, long-term timber supply.	**1.1** Timber management activities are recognized as appropriate land uses in all resource management zones outside of protected areas and the Mineral/Wildlife Management Zone, while respecting other resource values. **1.2** Application of the Forest Land Reserve (FLR) will be applied to Provincial Forest in the following areas: Fleming Landscape Unit (LU), Babine West LU, Babine East LU, Taltapin LU, Ootsa LU south of Ootsa lake, Intata LU south of Intata Reach, Chelaslie LU, Binta and North Binta watersheds within the East Francois LU, Ootsanee, Knapp, Enz, Davidson, Marilla and Bird watersheds within the Cheslatta LU. **1.3** The assessment of Provincial Forest lands (outside of those indicated in 1.2) for designation as Forest Land Reserve or inclusion in the Agriculture/Settlement zone

Timber Objectives	Management Strategies
	will occur over time. Lands evaluated as being suitable for agriculture and/or settlement will be considered for inclusion in the Agriculture/ Settlement zone, while lands considered more suitable for long term timber production will be considered for inclusion in the FLR., as per the process outlined in Section 4.2, strategy 1.5.
2. Ensure the availability of the short term timber supply.	**2.1** The intent is to have at least two years of approved wood under cutting permits for all forest license tenure holders every year following Plan approval. **2.2** Major licensees and the SBFEP will develop spatially explicit long term harvesting plans (20 year minimum) to confirm available short term timber supply. The aim is to complete these plans by March 1999. **2.3** If required, based on the outcome of 2.2 above, a strategy will be developed for implementation to mitigate any shortfall in annual timber harvest levels that may occur over the next 20 years. An array of strategies will be considered that respect all values. The Monitoring Committee will review and comment on options and recommend action where appropriate.
3. Consistent with the objectives and strategies within this Plan, optimize the sustainable supply of timber for harvesting.	**3.1** The inventory of timber resources will be improved, consistent with evolving Ministry of Forests inventory standards. This information will be used as a basis for managing timber resources. **3.2** A timber management strategy will be developed to document opportunities for enhancing long term quality and quantity of the timber resource consistent with the zoning and objectives set out in this Plan. The timber management strategy will be delivered through a combination of administrative structures, and will focus on: • silviculture systems and activities • rehabilitation measures (roads & landings, and low site) • research into harvesting techniques, growth and yield, estate modelling,

Timber Objectives	Management Strategies
	non-recoverable losses, etc. • improved timber utilization • forest inventories. **3.3** The timber management strategy will guide future funding allocation for the full range of silviculture programs **3.4** Productivity enhancements are generally acceptable where proposed activities are not in conflict with the resource management emphasis, objectives and strategies of resource management zones.
4. Increase opportunities for value added manufacturing in the timber sector.	**4.1** The long-term potential of value-added manufacturing will be encouraged through the development and implementation of timber quality objectives and strategies. **4.2** Efforts will be made to capture the highest value per cubic metre of wood for all timber products.
5. Manage the timber resources in accordance with integrated resource management principles and practices.	**5.1** The responsible agencies will implement and administer the provisions of the *Forest Practices Code of British Columbia Act*, and associated regulations and guidebooks, as a primary means of ensuring the sustainable management of all forest resource values and ecosystems at the operational level. **5.2** Develop a district-wide forest health management strategy which addresses the full range of objectives attached to the resource management zones within this Plan, and the interface between the managed forest and recommended protected areas.
6. Increase opportunities for alternative (small scale) forestry operations.	**6.1** Where economically feasible and ecologically appropriate, sensitive and innovative approaches to timber harvesting and silviculture will be promoted. **6.2** Salvage opportunities will be identified and promoted. **6.3** Opportunities for reducing, reusing or recycling wood residue and/or utilizing its energy value will be explored.

Energy & Mineral Resources

Resource Values and Issues

Significant energy and mineral resource potential exists in the Lakes District, however, due to the "hidden" nature of the resource, it is difficult to predict the actual extent of this potential. While only small areas of land are used for development, the speculative nature of the resource means access to large areas of land is essential for exploration.

Energy and mineral exploration activities are temporary in nature. Few mineral occurrences become operating mines. Development may result in localized long term extractive, reclamation and monitoring activities. Where mineral exploration and development do occur, it is important that development plans address avoidance, minimization and/or mitigation of local impacts.

Though no mines are currently found in the planning area, mines adjacent to the district occur in rock formations which extend into the Lakes area. This, in combination with recent discoveries of gold and silver and advanced exploration on a molybdenum deposit in the northern tip of the district, is an indication of the future potential for mineral exploration and development. Highly significant metallic mineral deposits are also found in portions of the former Tweedsmuir Recreation Area.(see section 4.5 Mineral/Wildlife Resource Management Zone for further information).

Energy and industrial mineral potential have not been well documented to date.

General Management Intent

This Plan confirms that energy and mineral exploration and development are acceptable uses of the land, outside of protected areas.

It is the general management intent of the Lakes District LRMP to maintain opportunities and access for energy and mineral exploration, development and transportation. Energy and mineral exploration and development activities will be integrated with other resource uses and activities and conducted in an environmentally responsible manner. Exploration and development of energy and mineral resources will be permitted within the regulatory framework for surface and sub-surface resources, and practices will be consistent with the resource management objectives for each resource management zone within this Plan.

For proposed energy and mineral developments, consistency with LRMP objectives will be addressed through the provincial Environmental Assessment Process. For small mines, quarry development, and exploration activities, zone objectives will be addressed by the inter-agency regional development review process. Where energy and mineral exploration and development do occur, proponents will avoid, minimize

and mitigate local impacts by practicing a high degree of resource stewardship in their efforts to provide economic development opportunities.

Revisions to standards of practice and permitting processes will be implemented in order to address evolving management issues, to provide consistency with the Forest Practices Code (FPC) where required, and to ensure timely and efficient permitting.

Energy & Mineral Objectives	Management Strategies
7. Maintain opportunities for access to Crown land for potential development of mineral and energy resources (oil and gas, geothermal and other energy related resources).	**7.1** Opportunities for mineral and energy resource exploration and development will be made available on all lands outside of protected areas, subject to standard regulatory approval processes and conditions, and in accordance with Lakes District LRMP objectives and strategies. **7.2** Access onto Crown land for energy exploration and development will be undertaken in conformance with the *Oil and Gas Exploration Handbook and Guidelines*, with a requirement for access development to demonstrate sensitivity to environmental, visual and recreational values, where these have been identified. **7.3** Local level planning processes will be provided with appropriate information on mineral and energy resource values to ensure integration at the local level.
8. Encourage development of district energy resources to provide local employment and investment.	**8.1** The Ministry of Energy and Mines will encourage geological surveys and research on subsurface resources.
9. Promote exploration and development of new mining, energy and quarry opportunities.	**9.1** Opportunities for mineral, energy and quarry materials tenure acquisition, exploration, access, development and mining, will be maintained on all lands outside of protected areas consistent with LRMP objectives. **9.2** Existing "no staking" and "conditional" mineral reserves will be forwarded by Ministry of Energy and Mines for review with the Prince Rupert IAMC with a view to amending or canceling unnecessary or redundant reserves. **9.3** To promote new mineral and energy opportunities (e.g., industrial minerals and

Energy & Mineral Objectives	Management Strategies
	value-added technology), technical data, information and inventory collection should continue.
10. Ensure sound, responsible management of mineral, quarry materials and placer resources.	**10.1** All mineral and placer activities will be subject to standard regulatory approval procedures and conditions, including, in the case of major mining proposals, the *Environmental Assessment Act and Regulations.* **10.2** Approval conditions, including bonding, will ensure reclamation of disturbed sites. **10.3** The LRMP Monitoring Committee will review and comment on any energy and mineral development proposals made available for review under the *Environmental Assessment Act and Regulations.*

Agriculture Resources

Resource Values and Issues

Agriculture in the Lakes District is significantly constrained by soils and climate. Limited precipitation and frost-free days restrict activities primarily to cattle ranching and forage crops, with some cereal grain production. Despite these challenges, the area does support a viable agriculture sector, particularly for cattle ranching. There are between 65 and 80 beef cattle and/or forage operations in the planning area. Most of these operations depend on crown range lands for grazing during the summer and fall.

Most agricultural activity occurs in the mid-district area, bounded by Ootsa and Cheslatta lakes to the south and the Bulkley and Endako river valleys to the north. The majority of the arable land (Canada Land Inventory, Class 5 or better) in the District is found in this area, typically associated with lakeshores, river valleys, and the Grassy Plains area between Francois and Ootsa lakes. The most productive arable soils in the mid-district area are generally under private ownership and are being used for the production of forage crops. There is a recent history of land use conflict as areas of higher soil capability tend to intersect with ungulate winter range and as proposals for agricultural expansion have begun to bump up against existing forest development.

Of primary concern is the agricultural land disposition process, particularly as it relates to resource conflicts with forestry and wildlife values, and the availability of Crown land for expansion of agriculture holdings. Also of concern are the enhancement of grazing opportunities, appropriate weed control measures, and maintenance of water quality.

General Management Intent

It is the general management intent of the Lakes District LRMP to maintain opportunities and access to Crown land for agricultural development. Generally speaking, agricultural development activities will be integrated with other resource uses and activities, and conducted in an environmentally responsible manner. Agricultural development will be permitted within the existing provincial regulatory framework, and practices will be consistent with the resource management objectives for each resource management zone within this Plan.

The Lakes District LRMP acknowledges the importance of livestock grazing as an existing use on Crown land and seeks to enhance opportunities through more effective integration of demands for grazing into operational forestry plans. It was also considered important to increase the effectiveness and safety of the noxious weed control program.

The Lakes District LRMP seeks, at a minimum, to maintain existing opportunities to make Crown land available for agricultural expansion (agriculture lease applications) and, particularly within the Agriculture - Settlement Resource Management Zone, to commit to more detailed planning to more effectively deal with wildlife - agriculture - forestry conflicts with regards to these applications.

Agriculture Objectives	Management Strategies
11. Maintain/enhance the current level of grazing activity.	**11.1** Grazing will be considered an appropriate Crown land use, subject to the terms and conditions identified in approved grazing tenures and range use plans and consistent with Lakes District LRMP objectives and strategies. **11.2** Guidelines will be developed to address forest encroachment and ingrowth, and projects will be implemented to restore fire maintained ecosystems in order to maintain or increase grazing opportunities. **11.3** Encourage improvements to the Crown range infrastructure (e.g., fencing, stock-watering structures, seeding, road access) to allow improved range management and increased availability of forage.

Agriculture Objectives	Management Strategies
	11.4 Develop funding proposals in support of the agriculture and rangeland objectives as necessary.
12. Integrate grazing objectives with operational timber management activities.	**12.1** Forest Development Plan and Range Use Plan proponents must make reasonable efforts to contact each other to ensure optimum integration of timber harvesting and grazing objectives. Active involvement in consultation on the part of both parties will be required for effective resolution of integrated resource management issues and concerns. **12.2** Increase forage production through seeding of disturbed or logged areas where biophysical attributes (e.g., soil conditions, moisture regime) permit, demand exists, range utilization standards are achievable, and range use planning requirements are being met. **12.3** Silviculture prescriptions shall contain specific measures to minimize livestock-related plantation damage and the breaching of natural or man-made barriers to livestock movement. **12.4** Range Use Plans that include timber harvesting areas must also detail methods to minimize livestock damage to tree seedlings.
13. Provide opportunities to improve the viability of agricultural operations through expansion onto Crown land.	**13.1** Suitable lands may be made available through application under the *Land Act* in accordance with both extensive and intensive agriculture policies administered by BC Lands. **13.2** Agricultural use will receive greater emphasis for those lands within the Agriculture/Settlement Zone (Chapter 4, Section 4.2). **13.3** Limit initial application of the Forest Land Reserve on lands outside of the existing Provincial Forests to enable identification of areas with potential for future agricultural expansion, as per

Agriculture Objectives	Management Strategies
	Timber Resources Strategies 1.2 and 1.3 above.
14. Maintain opportunities for water allocation for agricultural uses.	**14.1** More detailed strategic planning processes will be provided with appropriate information on agricultural uses of water to ensure such uses are integrated with other land and resource activities.
15. Maintain the integrity (including ecological) of agricultural resources (e.g., grazing lands and health of rural residents) through safe and effective prevention and control of invasive weeds.	**15.1** Recognize that invasive weeds can affect natural ecosystem function, including impacts detrimental to both plant communities and wildlife. In cooperation with the Northwest Weed Committee, minimize infestations of invasive weed species through integrated control measures. **15.2** In developing integrated weed control strategies, consider a range of control options such that community concern over the level of use of (and reliance upon) chemical controls is addressed. **15.3** Follow the *Pesticide Control Act* when applying chemical controls to ensure safe practices and adequate public notification.

Agriculture Objectives	Management Strategies
16. Integrate agriculture and wildlife habitat values.	**16.1** Wildlife population and habitat enhancement proposals will address potential impacts on the agricultural resource. Similarly, livestock management proposals, and the agricultural lease program, will address potential impacts on the wildlife resource. **16.2** Consider leasing and licensing arrangements which could allow for agricultural development while protecting wildlife habitat values. **16.3** Agriculture lease development plans and range use plans will outline habitat protection or conservation measures including, where necessary, the location of restricted activities to minimize agriculture and habitat conflicts. A lease with no purchase option may be considered where it is deemed necessary for government to retain management flexibility to reduce potential land use conflicts, protect ecologically sensitive areas, or to manage land subject to periodic flooding. Every attempt will be made to exclude critical habitat areas from agricultural lease boundaries.

Fish and Wildlife Resources

Resource Values and Issues

The Lakes District planning area is home to a diversity of habitat types and fish and wildlife species. Many of these are regionally or provincially significant. Others are commercially important. Some are considered threatened.

- Fish

The planning area encompasses headwaters of both the Fraser and Skeena river watersheds. Numerous lakes and streams support 14 species of sport fish. Fishing of both migratory and non-migratory species is an important recreation and tourism feature of the region. The area also supports several Native food fisheries.

Fish populations are slow growing and late maturing. Exploitation has increased in step with development of road access. Ease of access increases the potential for *overfishing, especially of trout, and has resulted in the loss of larger older fish in many lakes. Management options to protect fish populations include improved regulations and maintaining a number of lakes in an unaccessed condition. Viable habitat for Bull trout, a blue-listed (threatened) species, also exists within the Lakes District.*

Uncha Creek, Babine River and Lake, Pinkut Creek, Sutherland River and Bulkley River are the most significant fishery systems in the planning area. Uncha Creek is the most productive trout stream leading into Francois Lake, with excellent cover and abundant rearing areas.

Babine Lake and its tributaries support sockeye and coho salmon, steelhead, burbot, cutthroat trout, Dolly Varden, kokanee, lake trout, lake whitefish, Rocky Mountain whitefish and rainbow trout. This lake sees heavy use from both sport and First Nations fisheries. Major sockeye spawning occurs in accessible tributaries. Pinkut Creek and Sutherland River are the main tributaries. Spawning habitat has been artificially expanded on Pinkut Creek. The Sutherland River is responsible for 80% of the rainbow trout recruitment into Babine Lake.

The Bulkley River supports sockeye, coho, pink and chum salmon along with steelhead, burbot, cutthroat trout, Dolly Varden, lake trout, lake whitefish, Rocky Mountain whitefish, and rainbow trout. The river supports sportfishing and a native food fishery.

Limited information is available on the lakes within the planning area. However, many of these lakes are known to have high fishery values. For example, Francois Lake is populated with, burbot, lake trout, rainbow trout, and whitefish. Sockeye and pink salmon migrate through Francois Lake on their way to spawning areas near Nadina Lake.

- Wildlife

Ungulate species in the area include: caribou, moose, mule deer, and mountain goat. Moose and mule deer populations are found throughout the district, their critical habitat being low elevation southern exposures, steep south facing wind swept grasslands, and wetland complexes. The southern portion of the district encompasses most of the summer and winter ranges, and all of the intervening migration corridor, for the provincially significant Tweedsmuir-Entiako caribou herd. Mountain goat populations are found in alpine habitats in the extreme north (Tildesley) and southwest (North Tweedsmuir Park) areas of the district as well as in isolated river canyons.

Large omnivorous and carnivorous species include primarily black bear, grizzly bear, coyote and wolves, with some occurrences of wolverines and cougars. Large carnivore populations range throughout the district. Furbearing species such as lynx, red fox, fisher, marten, ermine, beaver, gray wolf, coyote, snowshoe hare, beaver, river otter, marmots and red squirrel are reasonably abundant. Many are commercially harvested.

Upland game birds include ruffed, blue and spruce grouse and several species of ptarmigan. Numerous lakes and wetland complexes provide habitat for the Canada goose, mallard, common loon, common and red-breasted merganser, bufflehead, common and barrows golden-eye, sandhill crane, kingfisher, spotted sandpiper and harlequin duck. Avian predators include osprey, bald eagle, American kestrel, and several species of hawks and owls. Songbirds found in the planning area include: Swainson's thrush, yellow warbler, yellow-rumped warbler, blackpoll warbler, olive-sided flycatcher, Hammond's flycatcher, pileated woodpecker, hairy woodpecker, black-capped chickadee, and red-breasted nuthatch.

Of the vertebrate species found in the area, one, the Anatum peregrine falcon, is provincially red-listed (endangered). Fifteen are blue-listed (threatened) including: Anna's hummingbird, bald eagle, caribou, great blue heron, grizzly bear and Vaux's swift. Fifty-four are yellow-listed (of special management concern) including: blue and spruce grouse, black bear, bufflehead, common merganser, fisher, gray wolf, lynx, marten, mink, moose, mountain goat, mule dear, osprey, pileated woodpecker, river otter, sandhill crane, and trumpeter swan.

Wildlife species in the planning area require a variety of habitats to sustain their populations. Important wildlife habitats include interior mature and old-growth forest, riparian areas along lakes, rivers and streams, sub-alpine and alpine areas, wetland complexes and steep south-facing slopes. The value of each of these habitats varies by species with some features being locally concentrated and others broadly distributed in the district. Hunting, trapping and viewing of wildlife are important recreation and tourism features of the region.

General Management Intent

The Lakes LRMP adopts the general management direction of ensuring that the habitat needs of Red & Blue-listed (rare & threatened) and Yellow-listed (of special management concern) species are provided for. In some instances (i.e., caribou, ungulate winter habitat) specific habitat concerns have been identified at the strategic level (see Sections 4.4 and 4.5). Other more broadly-based habitat concerns will be addressed through biodiversity management at the landscape and stand level. Red-listed (rare) species include a small number of rare plant communities, also to be identified and managed for at the landscape and stand level. Ecosystem and biodiversity management objectives and strategies are found in Section 3.4, Environmental Direction.

The Plan confirms that the sustainable harvest of fish and wildlife resources is an acceptable activity, and works to provide opportunities through the maintenance of sufficient habitat of appropriate capability to sustain fish and wildlife populations. The Plan further recognizes the increasing importance of sustainable, non-consumptive uses of wildlife resources and the importance of providing opportunities for these activities. Commercial use of fish and wildlife, both consumptive and non-consumptive, will be permitted through existing regulatory frameworks for trapping, guide-outfitting, backcountry tourism and recreation. Practices will be consistent *with the resource management objectives for each resource management zone within this Plan. Economic direction for fish and wildlife resources can be found below.*

Fish And Wildlife Objectives	Management Strategies
17. Manage fish and wildlife populations to provide long term and sustainable economic benefits to the region.	**17.1** Recognize both consumptive (i.e., hunting, angling) and non-consumptive (i.e., wildlife viewing, eco-tourism) uses of fish and wildlife resources as legitimate economic opportunities in the course of resource planning and management. **17.2** Seek to maintain an annual harvest of big game species and sport fish species sufficient to provide fishing, hunting and trapping opportunities. The Provincial Wildlife Harvest Strategy will guide the regulation setting process. **17.3** Maintain inventories of fish and wildlife populations sufficient to calculate annual allowable harvests (AAH) that are ecologically sustainable. **17.4** Encourage economic return from hunting, fishing, and eco-tourism activities by maintaining these activities over as large a percentage of the Crown land base as possible in order to provide quality wilderness hunting, fishing, and eco-tourism experiences and to avoid over crowding and associated problems. **17.5** Sport hunting opportunities of ungulates will continue to be offered to both residents and non-residents of British Columbia, consistent with current policy and legislation. **17.6** Wildlife viewing will be encouraged at times and places that do not put undue stress on wildlife species and populations.
18. Maintain opportunities for a viable guide outfitting industry.	**18.1** Maintain sufficient habitat for big game animals to provide ecologically sustainable populations of these animals as well as maintain a commercial harvest. **18.2** Maintain the largest percentage of the annual allowable harvest (AAH) for resident hunters.

Fish And Wildlife Objectives	Management Strategies
	18.3 Maintain a percentage of the AAH for commercial use consistent with ensuring the viability of the industry. **18.4** Maintain a system for licensing of guide outfitters to both provide certainty for the industry and ensure sustainable distribution of activity across the land base.
19. Maintain opportunities for a viable trapping industry.	**19.1** Maintain sufficient habitat of commercially significant fur bearers to provide ecologically sustainable populations of these animals as well as maintain a commercial harvest. **19.2** Maintain a percentage of the Annual Allowable Harvest (AAH) for commercial use consistent with ensuring the viability of the industry. **19.3** Maintain the present system for licensing of trappers to both provide certainty for the industry and ensure sustainable distribution of activity across the land base. **19.4** Provide the industry with sufficient information on proposed future development, in a timely fashion, to allow planning.
20. Maintain opportunities for a viable angling guide industry to service both resident and non-resident anglers.	**20.1** Maintain populations of popular sport fish species and age classes to provide for a viable angling guide industry consistent with the Fisheries Program Strategic Plan. **20.2** Monitor fishing demand on both lakes and streams to identify situations where over-crowding and/or over-fishing threaten commercial fish populations.

Tourism

Resource Values and Issues

The local tourism industry is largely based on part-time/seasonal ventures that capitalize on the area's natural resources. A number of small resorts, campsites and related businesses generate a small but significant amount of employment and income. Burns Lake is the primary point of access for northern Tweedsmuir Park, the second largest park in British Columbia. Tourism is dominated by fishing, boating on the numerous lakes, guided hunting, and the "rubber tire" trade (largely en route to and from Prince Rupert and Alaska).

Outdoor recreation experiences are key to the quality of life enjoyed by local residents and are the driving force behind tourism. Opportunities exist for a full range of outdoor activities. According to 1989 figures for northwestern BC, 27% of resident travelers and 59% of non-resident travelers had a trip purpose that was natural resource based [Ministry of Forests, 1994]. Tourism studies for the North by Northwest region confirm that fishing, boating, and hunting are the major tourism and outdoor recreation activities. Studies also indicate a trend toward increased backcountry and eco-tourism (e.g., wilderness travel, wildlife viewing) in the region.

The land and resource requirements for tourism and outdoor recreation are generally related to the availability and conservation of natural resource values attractive for outdoor recreation. These values include: wildlife, fish, old forest, pleasing scenery, feature-based recreational activities, remote and/or wilderness areas, and availability of a range of outdoor recreational opportunities from backcountry (low user density) to full-service camping (high user density) experiences.

Tourism and outdoor recreation concerns focus on providing opportunities for the full range of recreation activities. The spectrum of recreation opportunities will include: motorized and non-motorized access, frontcountry and backcountry experiences, consumptive and non-consumptive activities, and public and commercial users.

General Management Intent

The general management intent of the Lakes District LRMP is to maintain a wide spectrum of public recreation and tourism values and opportunities. This will be achieved through conservation of natural resource values attractive to outdoor recreationists, and the linking of desired recreation experiences with compatible resource management zones.

Opportunities and access to Crown land for public recreation and tourism will be maintained and, where appropriate, enhanced. Tourism and recreation activities will be integrated with other resource uses and will be conducted in an environmentally responsible manner. Public recreation and tourism will be permitted within the existing regulatory framework, including the Forest Practices Code, Forestry Recreation Program, and provincial policy for Commercial Backcountry Recreation *on Crown land. Practices will be consistent with the resource management objectives for each resource management zone within this Plan.*

Detailed recreation management strategies will be developed through local level and protected areas planning processes. Related resource management objectives can be found under: Fish and Wildlife Resources, Ecosystem Health, Visual Resources (Chapter 3), and the Special and Protection Resource Management Zones (Chapter 4).

Tourism Objectives	Management Strategies
21. Maintain opportunities for a secure, long-term, viable tourism industry.	**21.1** Provide opportunities for tourism tenures on Crown land. **21.2** Inventories on tourism and tourism related resources will be improved, consistent with government standards. This information will be used in more detailed strategic planning as a basis for integrating tourism related resources on Crown land. **21.3** In the absence of local level planning, ensure integration of tourism resource values consistent with the objectives and strategies of this Plan.
22. Provide opportunities for resort development and commercial backcountry recreation operations on Crown land.	**22.1** Suitable areas of Crown land will be considered for frontcountry resorts and commercial backcountry recreation. Proposals to allocate Crown land for these purposes will be referred to affected government agencies and will be evaluated with consideration for the full range of issues, concerns and processes. **22.2** More detailed plans will identify existing commercial backcountry recreation on Crown land. Plans will also identify areas with capability and suitability to support new operations and will establish guidelines or policies, as appropriate, to maintain existing and potential opportunities.
23. Provide tourism opportunities, as appropriate, in provincial parks.	**23.1** Existing commercial backcountry recreation uses in new provincial parks will be considered acceptable land uses subject to compliance with park management plans. **23.2** Provincial park management planning processes will examine potential

Tourism Objectives	Management Strategies
	commercial opportunities within provincial park land.

Settlement, Utility and Communication Uses of Crown Land

Resource Values and Issues

Settlement in the Lakes District planning area is well distributed amongst the Village of Burns Lake and several outlying rural-agricultural and lakeshore-residential communities. The Burns Lake Official Community Plan anticipates local needs for new settlement areas, however, lands with potential for new settlement have not been strategically identified on a district-wide basis. Any land reserve designations (e.g., Agriculture and Forestry Land Reserves) should be thoughtfully applied so as not to unduly restrict future needs for settlement areas.

The conversion of Crown land in outlying areas is driven by agricultural development and demand for waterfront residential property. Concern exists over the fragmentation and loss of wildlife habitat due to incremental agricultural and settlement expansion.

The planning area is bisected by a major East-West transportation, utilities and communications corridor (i.e., Highway 16, hydro-electric, railway, and telecommunications lines, natural gas pipelines). The District is also traversed by a transportation network in support of resource development and human settlement. Corridors are a concern as they provide a means for motorized access and lead to the fragmentation of wildlife habitat. The planning, development and rehabilitation of secondary corridors is more fully addressed in Access Management objectives and strategies found under both Economic and Environmental Direction (Sections 3.2 and 3.4).

General Management Intent

The Lakes LRMP adopts the general management direction of maintaining existing settlement, communication, and utility corridors, areas and sites. This includes maintaining access and infrastructure for existing facilities while ensuring that future development utilizes existing corridors, areas and sites wherever possible. Expansion proposals will be co-ordinated with other users (e.g., through co-ordinated Access Management Plans, or other appropriate referral processes). Settlement, communications and utilities development, maintenance and upgrading activities must also take place with sensitivity to high value wildlife habitat, recreational values, and visual quality objectives.

Land designations (e.g., Agriculture and Forest Land Reserves) should be thoughtfully applied so as not to unduly restrict future needs for settlement expansion. Particularly, application of the Forest Land Reserve should initially be limited to *those areas indicated in Timber strategy 1.2 to enable evaluation of non-encumbered Crown land for suitability for settlement purposes.*

Settlement, Utility & Communication Uses of Crown Land - Objectives	Management Strategies
24. Maintain opportunities for settlement, utility, communication, and other site-specific uses of Crown land.	**24.1** In response to individual proposals or through proactive marketing methods, suitable Crown land parcels will continue to be allocated for industry, commerce, settlement, utility, communication, transportation, recreation, conservation, foreshore, community development, public works, institutional uses and other site specific, non forestry uses. **24.2** The allocation of Crown land for settlement purposes will primarily, although not exclusively, be delivered from BC Lands within municipal boundaries, Regional District official community plan areas, and existing settlement corridors. **24.3** Provincial agencies will, as appropriate, participate in official community planning processes and regional growth management strategies initiated by local governments to ensure that appropriate information on Crown land suitability for settlement and settlement-related purposes is incorporated. **24.4** Participation in growth management strategies will emphasize a proactive approach for integrating settlement with the full range of land use activities. **24.5** As lands with potential for future settlement have not been strategically identified, limit initial application of the Forest Land Reserve on lands outside of the existing Provincial Forests to enable identification of areas with potential for future settlement expansion, as per Timber Resources Strategies 1.2 and 1.3 above. **24.6** It is recommended that no new utility or communications uses be established in new protected areas.

Settlement, Utility & Communication Uses of Crown Land - Objectives	**Management Strategies**
25. Recognize environmental conservation and other land use and resource management objectives when making decisions on the disposition of Crown land for settlement and other purposes.	**25.1** Proposals for allocating Crown land for settlement purposes will be reviewed on an integrated coordinated basis with other interested agencies. Where possible, allocations will be directed away from significant environmental or resource values, such as biodiversity connectivity corridors, key wildlife habitats and high capability agricultural lands or forest lands. **25.2** A coordinated approach to siting utility/transportation corridors will be promoted, particularly within biodiversity connectivity corridors, to minimize linear barriers to ecological values. **25.3** The siting of new landfills will respect management requirements for wildlife (particularly wide ranging carnivores such as black and grizzly bears), water quality protection and the need to minimize the impacts of scavenger species in critical winter ranges and wetlands.

Access Planning and Management

Resource Values and Issues

Access development, while necessary for purposes of resource development, creates a number of management issues with respect to resource conservation. The creation of access for tenured resource users opens previously inaccessible areas to non-tenured users as well. The most significant consequence of increased access is increased pressures on fish and wildlife populations - most notably, those species with commercial and recreational value and/or sensitivity to interactions with humans.

Timber harvesting and silvicultural activities are the primary catalyst for access development. While timespans for harvesting in an area may be relatively short, access must be maintained where successive silvicultural treatments are planned. The longer a road remains open, the greater the reliance of non-forestry resource users (both tenured and non-tenured) becomes and the more negative the response to proposed road closures or deactivations. In this way, the Forest Service Road network becomes a public resource.

The terrain of the Lakes District presents relatively few obstacles to access for resource development. This creates the potential for an extensive access network throughout the planning area, resulting in concerns over direct loss of productive forest lands as well as loss and/or fragmentation of wildlife habitat. Sedimentation of fish habitat due to road development and/or inadequate road maintenance is also a major concern.

The primary objective in the planning and management of access is to strike a balance between the legitimate needs of resource users and the conservation of significant fish, wildlife, and other resource values. Public awareness and understanding of management strategies underlying access planning and management will be critical in striking this balance.

General Management Intent

The Lakes LRMP adopts the general management direction of maintaining access opportunities for the full range of resource development and user needs while minimizing conflict with the conservation of sensitive environmental, recreational and cultural heritage values. An access management strategy will co-ordinate access development among the various users and ensure that future development utilizes existing and/or shared access wherever possible. Access management will incorporate the maintenance of new and existing roads to prevent sedimentation of fisheries habitat. In the interests of sustaining long term forest productivity as well as fish and wildlife habitats and populations, deactivation of roads will be an access management option.

Significant fish, wildlife and other resource values will be identified and protected through site specific strategies such as: identification of the best location for roads, limiting the use or frequency of use during certain periods and, if necessary, restricting access through road closures or deactivations. Access may be prohibited in specific areas where fish or wildlife values are critical to species maintenance.

Road access for resource development is an acceptable use of the land and will proceed subject to LRMP direction and existing Provincial legislation and regulations including the Forest Practices Code (FPC) and Mining Rights Amendment Act. Access development and management will be consistent with the objectives for each resource management zone within this Plan.

Access Planning and Management - Objectives	Management Strategies
26. Provide opportunities for access, including roads, to accommodate the full range of resource development and access needs, consistent with resource management zone emphasis.	**26.1** Access for resource uses will be accommodated on all lands outside of protected areas, subject to provincial laws, regulations, policies, guidelines, criteria and land/resource use plans which regulate or have a bearing on those uses. **26.2** Long term access proposals will be incorporated into long term (20 year) harvesting plans (strategy 2.2). **26.3** Short term access plans will be incorporated into 5 year Forest Development Plans.
27. Minimize conflicts between resource access developments (and subsequent resource use and development activities) and sensitive environmental, recreational and cultural heritage resource values and areas.	**27.1** Access proposals for commercial resource exploration, development and use activities that would result in mechanical surface disturbance will be subject to inter-agency review. Management measures to avoid and/or mitigate undesirable effects of such activities on other sensitive resource values and areas will be identified and implemented. **27.2** An access management strategy will be produced for the Lakes Forest District, in consultation with the Monitoring Committee (as per the provisions of Chapter 6), to identify access opportunities and restrictions for public, industrial and commercial uses of the provincial land base.
28. Address area-specific access related issues.	**28.1** In the absence of more detailed strategic planning, the level of acceptable access will be assessed via the existing inter-agency review process. **28.2** Future priority areas to address access management issues will be evaluated and determined on the basis of screening criteria, including: • public expectations • degree of resource and conservation sensitivity and potential conflict

Access Planning and Management - Objectives	**Management Strategies**
	• existing access • level of past investment into resource assessment/exploration/development • urgency of resource management concern • availability/accuracy of information/ inventory on resource values **28.3** More detailed strategic planning exercises that address access management issues will be conducted on a cooperative, inter-agency basis in consultation with the LRMP Monitoring Committee (as per the provisions of Chapter 6).

3.3 Social Direction

Cultural Heritage Resources

Resource Values and Issues

Cultural heritage resources in the Lakes District planning area reflect past and present uses by both aboriginal and non-aboriginal peoples. Three categories of resources are in evidence: archaeological sites containing physical remains of past human activity, historical sites often consisting of built structures or localities of events significant to living communities, and traditional use sites which may or may not show physical evidence of human-made artifacts or structures but maintain significance to living communities.

Known archaeological sites within the Lakes District include: habitation and subsistence sites with features such as earth ovens and cache pits, human remains, pictographs, and sites consisting of cultural materials such as stone tools and/or flakes. Historical sites date from the early fur trade and homestead period. Traditional use sites may include sacred sites, resource gathering sites such as berry picking and hunting grounds, sites of events of cultural significance, and legendary sites. A complex network of trails is indicative of early traditional use sites and trade routes between the aboriginal peoples of the coast and the interior. Regional trail systems (most notably, the Telegraph and Bella Coola trails) of both traditional and historical significance also traverse the planning area.

An archaeological overview assessment completed for the Lakes District identifies areas of significant archaeological potential. These areas, primarily associated with *lake, stream and other water features, will receive additional investigation through the resource development process as per the BC Archaeological Impact Assessment Guidelines. Traditional Use Studies combine with existing operational level protocols between aboriginal peoples and the Ministry of Forests to avoid or mitigate the impact of resource development on traditional use areas.*

Primary concerns include: avoiding the loss of cultural heritage resources, ensuring the maintenance of aboriginal rights in the course of natural resource development, and maintaining appropriate sensitivity in the development of cultural heritage resources.

General Management Intent

The Lakes LRMP adopts the general management direction of conserving select cultural heritage resources. Tools such as archeological assessment and traditional use studies will be used to assess cultural resources and address concerns in subsequent planning processes. Consultation with aboriginal peoples will continue to ensure that resource development does not infringe upon aboriginal rights. Development of cultural heritage resources will be encouraged in co-operation with aboriginal peoples and local governments.

Cultural heritage concerns will be addressed in a manner consistent with the British Columbia Archaeological Impact Assessment Guidelines, the Forest Practices Code; the Heritage Conservation Act, the Protocol Agreement on the Management of Cultural Heritage Resources between the Ministry of Small Business, Tourism and Culture and the Ministry of Forest; and any land and resource management protocols between the Province and the aboriginal peoples of the planning area.

Cultural Heritage Objectives	Management Strategies
29. Conserve select cultural heritage resources.	**29.1** Archaeological and cultural heritage resource assessments will be undertaken in accordance with legislation and policy respecting the management of such resources (i.e., new protocol agreement between Ministry of Small Business Tourism and Culture and Ministry of Forests respecting cultural heritage resource management, the BC Archaeological Impact Assessment Guidelines - 2495, the *Heritage Conservation Act,* the *Environmental Assessment Act,* and the *Forest Practices Code of British Columbia Act,* especially the *Forest Planning Regulation*). **29.2** Various tools including Archaeological overview assessments and traditional use studies will be used to assess cultural resource potential, in order to

Cultural Heritage Objectives	Management Strategies
	provide input into subsequent planning at both the strategic and operational levels. **29.3** Archaeological impact assessments will be undertaken and appropriate impact management measures (e.g., buffering, avoidance, access controls, signage, mitigation) will be applied as required, in response to requirements identified through Archaeological Overview Assessments, land/resource planning processes, implementation of the provincial *Environmental Assessment Act*, and to development proposals referred to the Archaeology Branch, Ministry of Small Business Tourism and Culture, by the public or private sectors, and by aboriginal peoples. **29.4** Archaeological overview information will be augmented by more detailed inventory of aboriginal traditional use sites (e.g., Traditional Use Studies). **29.5** Aboriginal traditional use sites will, as appropriate, be designated as provincial heritage sites under the *Heritage Conservation Act*. **29.6** The Heritage Branch, Ministry of Small Business, Tourism and Culture, will cooperate with appropriate municipal governments, agencies and interest groups to identify and conserve (through designation under the *Heritage Conservation Act*) appropriate historic sites, trails, buildings and other structures. **29.7** Maintenance of confidentiality on the nature and location of sites will apply to Lakes Forest District protocols with aboriginal organizations (which cover aboriginal sites, usage and study areas). Some sites may require sensitive area management designation to both protect and avoid misuse of certain features.
30. Ensure aboriginal rights are not unjustifiably infringed upon by resource development activities of the Crown or its	**30.1** Consultation with aboriginal peoples, as per government policy and protocols, will be undertaken for resource management

Cultural Heritage Objectives	Management Strategies
licensees.	activities which directly affect traditional territories.
31. Encourage development of cultural heritage interpretative facilities and programs.	**31.1** Opportunities for the development of interpretative facilities and programs will be assessed in cooperation with aboriginal peoples and local governments. **31.2** More detailed strategic planning processes will consider signage to identify sites as significant cultural heritage features, and to guide visitor use.

Jobs, Communities and Quality of Life

Resource Values and Issues

The Town of Burns Lake and the small outlying communities in the Lakes District provide diverse environments, community networks, and economic opportunities for their residents. Quality of life within the Lakes District is defined by the great natural beauty of the area, its forests, numerous lakes and streams, fish and wildlife, and the people themselves. Community perspectives to be integrated into land and resource management planning include the accommodation of all resource values and improved stewardship of natural resources.

The Lakes District planning area encompasses a wide variety of economic opportunities and lifestyle choices. Diversity of economic opportunity is extremely important to the small and rural communities in the district as it acts to stabilize the population and enables residents of these communities to achieve a high quality of life in rural and remote settings. Maintaining accessibility to and sustainability of a diverse range of resources, at a local scale, is critical to sustaining this quality of life. A stable and sustainable supply of timber for local mills is extremely important to the stability of the Village of Burns Lake and contributes to the viability of surrounding communities.

Other community concerns include: increased value-added opportunities, incentives for improved resource stewardship, increased jobs per cubic metre of timber harvested, economic diversification, conservation and recreation management, public safety and education, meaningful consultation, and sensitive development adjacent to private lands.

General Management Intent

The Lakes District LRMP adopts the general management direction of promoting community stability and quality of life by maintaining resource accessibility and *sustainability for the benefit of all residents of the planning area. It is expected that the diversity of activities and practices necessary to meet land and resource management direction outlined in this plan will provide a comparable range of opportunities for local resource users.*

Concerns with respect to timber and other economically-based community values are addressed in detail in Section 3.2 and Chapter 4. Community conservation concerns are addressed in Section 3.4 and Chapter 4. Integrated land and resource management planning and practices will continue to evolve based on continued community involvement in land and resource management planning processes.

Jobs, Communities, & Quality of Life - Objectives	**Management Strategies**
32. Encourage community stability, including small rural communities, through job diversity initiatives and maintaining resource accessibility and sustainability at a local scale.	**32.1** Maintain a range of resource tenure types and opportunities in order to ensure access for a range of resource activities and development. **32.2** Timber stands that contribute to the timber supply should be harvested in proportion to their contribution over time. Monitoring, at regular intervals of two to five years, will focus on: • species profile, • volume profile, and • resource management zone profile. **32.3** Provide opportunities for resource users that create value-added products, practice responsible and sustainable resource management, and create more jobs per cubic metre of wood harvested. **32.4** Encourage economic diversification by providing opportunities for development of non-extractive natural resource based industries (e.g., tourism and recreation). **32.5** Resource development adjacent to private property will be conducted in a manner sensitive to the needs of both property owners and resource tenure holders. Active involvement in consultation on the part of both parties will be required for effective resolution of adjacency issues and concerns.
33. Manage resources to ensure a high quality of life with respect to clean air and water, conservation of fish and wildlife habitat, protection of unique local values,	**33.1** Refer to plan document sections concerning Social, Environmental, and Special Resource Management Direction (Chapter 3, Sections 3.3 & 3.4, and Chapter

Jobs, Communities, & Quality of Life - Objectives	Management Strategies
and provision of a range of outdoor recreation opportunities.	4) for specific management strategies.
34. Ensure a high degree of public safety with respect to resource extraction activities especially within and adjacent to communities.	**34.1** Endorse the work of and public involvement in community safety initiatives (e.g., Truck Safety Committee) in order to address safety issues relating to resource extraction activities (e.g., road safety and safe hauling practices).
35. Provide meaningful opportunities for local residents to be involved in resource planning at a variety of scales (strategic and non-strategic).	**35.1** Continue strategic land use and natural resource planning processes at the sub-regional planning level that involve representation of a full range of values and perspectives within the community. **35.2** Ensure interested local residents have the opportunity to contribute to the development of more detailed plans through scheduled and advertised review processes. **35.3** The LRMP Monitoring Committee will raise issues around plan implementation to the local residents and IAMC.
36. Broaden education, understanding, and skills within the District, with respect to land and resource management issues and practices.	**36.1** Encourage and support local colleges and schools to provide education and job training in all areas of natural resource management.

Outdoor Recreation

Resource Values and Issues

Outdoor recreation experiences are key to the quality of life enjoyed by local residents as well as being the driving force behind tourism. Opportunities exist for a full range of outdoor activities. According to 1989 figures for northwestern BC, 27% of resident travelers and 59% of non-resident travelers had a trip purpose that was natural resource based [Ministry of Forests, 1994]. Tourism studies for the North by Northwest region confirm that fishing, boating, and hunting are the major tourism and outdoor recreation activities. Studies also indicate a trend toward increased backcountry and eco-tourism (e.g., wilderness travel and wildlife viewing) in the region.

The land and resource requirements of outdoor recreation and tourism are generally related to the availability and conservation of natural resource values attractive for *outdoor recreation. These values include: wildlife, fish, old forest, pleasing scenery, feature-based recreational activities, remote and/or wilderness areas, and availability of a range of outdoor recreational opportunities from backcountry (low user density) to full-service camping (high user density) experiences.*

Outdoor recreation and tourism concerns focus on providing opportunities for the full range of recreation activities. The spectrum of recreation opportunities will include: motorized and non-motorized access, frontcountry and backcountry experiences, consumptive and non-consumptive activities, and public and commercial users.

General Management Intent

The general management intent of the Lakes District LRMP is to maintain a wide spectrum of public recreation and tourism values and opportunities. This will be achieved through conservation of natural resource values attractive to outdoor recreationists, and the linking of desired recreation experiences with compatible resource management zones.

Opportunities and access to Crown land for public recreation and tourism will be maintained and, where appropriate, enhanced. Tourism and recreation activities will be integrated with other resource uses and will be conducted in an environmentally responsible manner. Public recreation and tourism will be permitted within the existing regulatory framework, including the Forest Practices Code, Forestry Recreation Program, and provincial policy for Commercial Backcountry Recreation on Crown land. Practices will be consistent with the resource management objectives for each resource management zone within this Plan.

Detailed recreation management strategies will be developed through local level and protected areas planning processes. Related resource management objectives can be found under: Fish and Wildlife Resources, Ecosystem Health, Visual Resources (Chapter 3) as well as the Special and Protection Resource Management Zones (Chapter 4).

Outdoor Recreation Objectives	Management Strategies
37. Maintain a variety of outdoor recreational opportunities on Crown land, ranging from rural to primitive.	**37.1** Recreational opportunities will be provided, at both area-based and site-based scales, within all resource management zones. Recreation activities and access will be managed according to LRMP direction and provincial policy, programs and guidelines. Specific LRMP direction with respect to Protected and Special Resource Management areas (i.e., backcountry lakes, recreation areas, and recreation sites & trails) may be found in Sections 4.4 to 4.6.
38. Maintain significant recreation features.	**38.1** Inventory and classify recreation features to facilitate conservation and the development of appropriate resource

Outdoor Recreation Objectives	Management Strategies
	management strategies. **38.2** Resource development in the vicinity of significant recreation features will be managed such that development avoids or mitigates impacts upon those features.
39. Maintain and enhance opportunities for outdoor recreation activities through development of trails, campsites, commercial ventures and related infrastructure.	**39.1** Specific strategies will be developed for recreation resources and facilities, including strategies for recreation areas, backcountry lakes, recreation sites, and hiking trails (see Chapter 4, Section 4.4). **39.2** Commercial recreation will be recognized as a valid and appropriate use on Crown land, subject to the acquisition of required tenures/permits and conformance with approved management plans. **39.3** Inventories of recreation resources will be improved, consistent with Ministry of Forests inventory standards. This information will be used in more detailed planning processes as a basis for managing recreation values on Crown lands.

Resource Values and Issues

Visual quality is the extent to which the aesthetic or scenic value of a landscape is altered compared to the pre-existing or natural condition. The visual quality of many landscape features (e.g., scenic areas, lakeshores and streams, significant recreational areas and natural features, travel corridors, and community viewscapes) is significant to local residents as well as to tourism and recreation activities in the area. Maintaining the aesthetic values of the forest landscape provides a secure environment for tourism operators and ensures a quality natural environment experience for both local and non-local recreationists.

The primary objective in the management of visual resources is to ensure a level of visual quality which meets the expectations of the community, yet is consistent with the principles of integrated resource management. It is generally accepted that development can occur within visual resource areas while maintaining the visual quality of significant landscape features. The focus of management concern is on maintaining long-term visual landscape integrity and the capacity of the area to sustain outdoor tourism and recreation experiences in a forest management context.

General Management Intent

The Lakes LRMP adopts the general management direction of maintaining the aesthetic quality of Visual and Significant Visual Resource Areas throughout the district. The aesthetic quality of these areas has been identified as a key component in the maintenance of viable tourism and recreation opportunities in the district. The LRMP provides management guidelines (Appendix 5) identifying three classes of management for visual resources (significant visual, visual, and non-visual) and reflecting the relative significance of these areas to both communities and tourism and recreation users. Emphasis is placed on comprehensive planning for scenic viewscapes and minimization of visual impacts through appropriate design of harvest openings.

Resource development is permitted within Visual and Significant Visual Resource Areas, consistent with LRMP direction. Visual quality will be managed through existing legislation and regulation including the Forest Practices Code (FPC) and the Visual Quality Objective management guidelines of the Ministry of Forests. Where established, Visual Quality Objectives (VQO's) will apply to timber harvesting and should guide incidental timber harvesting associated with other resource user activities. Identified Visual and Significant Visual Resource Areas will have their site specific VQO's reviewed and either approved in other higher level plans or established by the District Manager in accordance with the FPC. VQO's may change over time due to new inventory information and changing public values.

Visual Resource Objectives	Management Strategies
40. To provide sufficient clarity and directive detail concerning Visual Landscape Management to support landscape unit and operational level resource planning and management decision-making. ("Significant Visual Areas" refer here to areas visible from communities, public use areas, or travel corridors which are of significance to the public and/or tourism and recreation users. "Visual Areas" (VAs), refer to areas of high visual or scenic value, outside of Significant Visual Areas, which are sensitive to forest development activities).	**40.1** Significant visual areas (e.g., areas visible from main highways, recreation areas and waterways, backcountry lakes, and communities) and visual areas are scenic areas as defined under the FPC. **40.2** Visual landscape resources will be managed in a manner consistent with the FPC and Visual Landscape Management Strategy outlined in Appendix 5. Visual quality objectives will be developed in accordance with LRMP management direction, the Forest Practices Code, and planning priorities as identified by MOF. **40.3** "Significant Visual Areas" and "Visual Areas," as identified in Figure 3, are the best available representation of district-wide, visual quality concerns. The Visual Landscape Inventory will provide interim visual quality objectives, and will function as a guide in refining visual management areas and objectives through local level planning processes. **40.4** Knowledge of visual landscape management areas will increase, over time, through development of higher resolution interpretive and field-based inventories. These more detailed inventories will then become the basis for determining visual management areas and objectives at the local level. Visual landscape management direction, however, will remain consistent with the LRMP. **40.5** Planning for scenic viewscapes should be carried out in a comprehensive manner, in order to determine the cumulative effects of forest development over time.
41. Design timber harvesting, forest management, and other resource management and development activities to reflect the importance of visible landscapes to communities, recreation, and tourism.	**41.1** Management emphasis within Visual and Significant Visual Areas will be placed on maintaining the quality of scenic and visual resources. Where visual and wildlife concerns intersect, visual quality objectives will be maintained to the extent that they do not counteract wildlife management objectives.

Visual Resource Objectives	Management Strategies
	41.2 Design of harvesting areas within Visual and Significant Visual Areas will be consistent with the MOF Visual Landscape Design Manual. In order to minimize the visual impact of development activities, block design should reflect the natural topography of the area, take existing development into account, and meet aesthetic goals for the area. **41.3** Forest management activities within Visual and Significant Visual areas (e.g., harvesting, salvage, fire and beetle control) will be consistent with the objective of maintaining the integrity of visual resources. It is recognized, however, that salvage harvesting following catastrophic events (e.g., fire, blowdown, infestation) may compromise visual quality from time to time.

3.4 Environmental Direction

Ecosystem Health

Resource Values and Issues

An ecosystem approach to resource management recognizes the structural, functional and evolutionary characteristics of the ecosystems which produce the renewable natural resources on which humans depend. An ecosystem being managed for resource use and/or extraction is said to be "healthy" when it exhibits characteristics (structure and function) similar to those of systems under natural, or unmanaged, conditions. By maintaining healthy ecosystems, communities are able to derive long term benefits from the productivity of those ecosystems.

Biodiversity is defined as the diversity of plants, animals and other living organisms in all their forms and levels of organization. It is an important measure of ecosystem health. Biodiversity enables ecosystems to adapt and remain productive in the face of environmental stress and/or change (e.g., disease, fire, climate change). It includes the diversity of genes, species, and ecosystems and the functional and evolutionary processes that link them. Strategic planning emphasizes ecosystem diversity in order to maintain diversity at the species and genetic levels.

Ecosystem diversity refers to the number of different habitats available within a particular ecosystem, and is directly reflected by species diversity. Human activity tends to split, isolate, and eliminate certain types of habitat while expanding others.

Conserving ecosystem diversity means maintaining sufficient areas of all naturally occurring habitat types to allow the species that are associated with those habitats to survive.

In the Lakes District, habitats of management significance include riparian complexes and dry ecosystems. Riparian complexes are groupings of swamps, black spruce types, wet brush areas and cottonwood flats which function as an ecological unit and provide linkages between other habitat types. Dry ecosystems are characterized by steep, grassy, south-facing slopes, often having a brush or deciduous component, which provides the earliest snow-free areas for spring forage. Significant concentrations of dry ecosystem types in the Lakes District are found near the north shore of: Chelaslie arm, Cheslatta Lake, Uncha Lake, Tchesinkut Lake, Hanson Lake, Taltapin Lake, Babine Lake east and in the vicinity of Red Hills, Colleymount , Boer Mountain, and Shass Mountain.

Maintaining general biodiversity depends on: (1) The protection and connectivity of large areas as ecological benchmarks at the regional level (see Section 4.5). (2) Provisions for habitat variety and connectivity at the landscape (watershed) level. (3)Management practices at the stand or site level. Due to the vulnerability of rare or threatened ecosystems, species or habitat types, specific measures may be required in addition to general biodiversity management.

An overview of District fish and wildlife resources can be found under Section 3.2, Economic Direction.

General Management Intent

The Lakes LRMP adopts the general management direction of maintaining ecosystem health based on an ecosystem approach to resource management. Key to the maintenance of ecosystem health are the conservation of biodiversity (at the genetic, species, and ecosystem levels) and the adequate protection of rare or threatened ecosystems, species, or habitat types. This will be achieved by maintaining a variety of habitat types (including interior mature and old growth forest conditions) throughout each landscape unit, ensuring connectivity between important habitat types using naturally occurring corridors (e.g., riparian areas), and employing ecologically appropriate silvicultural systems at the stand level.

Rare or threatened ecosystems, species, or habitat types will be identified for incorporation into other plans through sensitive or wildlife management area designations, or through ecologically appropriate silvicultural systems. Specific management provisions may apply to ungulate, carnivore, and fish species and/or habitats which are of significant management concern due to direct impacts such as consumptive use by people or high sensitivity to interactions with humans.

Biodiversity will be managed consistent with LRMP direction and existing legislation and regulation including the Forest Practices Code (FPC). Seral stage (i.e., old, mature and young forest) requirements for landscape units will be consistent with the Biodiversity Emphasis Options indicated in Appendix 9 and the FPC Biodiversity Guidebook - with the exception of the Chelaslie Caribou Migration Corridor, where *specific seral requirements have been identified for purposes of wildlife habitat management (see Appendix 3). Biodiversity and landscape connectivity objectives (Objectives 42 & 43) are not intended to create timber supply impacts greater than those suggested by the FPC Biodiversity Guidebook.*

Management objectives and strategies concerning Ecosystem Health are found below under: General Ecosystem Health, Terrestrial Ecosystem Health, and Aquatic Ecosystem Health. Proposed district contributions to the Prince Rupert Region Protected Areas Strategy are outlined in Chapter 4, Section 4.5.

General Ecosystem Health - Objectives	Management Strategies
42. Maintain healthy, functioning ecosystems that are essential to the diversity, abundance, distributions and life cycles of fish, wildlife, vegetation and water resources.	**42.1** A district monitoring program will be developed and implemented to track progress (over space and time) relative to the environmental objectives identified in this Plan (The monitoring program will identify and track key landscape and stand level indicators such as seral distribution, species distribution and abundance, coarse woody debris etc.). **42.2** An ecological approach to land and resource planning and management will be applied. In addition to other resource legislation, regulations and policies, the *Forest Practices Code of British Columbia Act (FPC)*, and its guidebooks will be used as a primary means of implementing an ecological approach to land and resource planning and management. **42.3** A district inventory plan will be developed that identifies and ranks information and mapping needed to support planning and management of terrestrial and aquatic ecosystems, and to support the development of air and water quality objectives. **42.4** Landscape unit plans will be developed which are consistent with the FPC *Biodiversity Guidebook* and the Regional Landscape Unit Planning Strategy (see Appendix 9 for excerpt). **42.5** Where private lands provide an important contribution to the maintenance of terrestrial or aquatic ecosystem values, efforts will be made to inform private land owners as to appropriate conservation

General Ecosystem Health - Objectives	Management Strategies
	measures on private land. **42.6** The introduction of non-indigenous plant and animal species into ecosystems will be carefully evaluated to restrict introductions to non-harmful varieties. Over time, efforts will be made to eliminate harmful non-indigenous species through ecosystem restoration measures. **42.7** Conserve high value terrestrial and aquatic wildlife habitat in future Crown land development through the design of mitigative strategies such as boundary delineation and incorporation of special conditions and provisos.
43. Maintain biodiversity at the ecosystem, species, and genetic levels through the application of ecosystem management principles.	**43.1** Implement the District Landscape Unit planning strategy found in the Prince Rupert Regional Landscape Unit Planning Strategy (excerpt in Appendix 9), which identifies Landscape Unit boundaries and establishes Biodiversity Emphasis Options and Landscape Unit planning priorities. **43.2** Landscape Unit planning will determine the mix and distribution of biodiversity management attributes (e.g., landscape connectivity, seral stage distribution, patch size and distribution) appropriate to each Landscape Unit. **43.3** Recognize that, while impractical to manage for all species individually, some species, ecosystems or habitats will require special management attention. **43.4** Design resource development plans to minimize the fragmentation of forest habitat and maximize the maintenance of interior forest conditions. **43.5** Harvesting activities will be planned to distribute a variety of seral stages across the landscape. Site-specific forest development activities will, where possible, be designed to resemble the shape and pattern of natural disturbances, except where otherwise intended by this Plan.

General Ecosystem Health - Objectives	Management Strategies
	Patch size distribution will also emulate natural disturbance patterns. **43.6** Stand level biodiversity management practices will be employed to provide for structural and species diversity in managed forest areas within the landscape unit. **43.7** Develop and implement an old growth management strategy which establishes, throughout the district, Old Growth Management Areas (OGMAs) dominated by old tree cover and containing most of the structure, function, microclimatic conditions and biota associated with old forest, including interior forest conditions. Within OGMAs, maintain old growth and interior forest conditions, and provide a representative cross-section of ecosystem types occurring in the District. **43.8** Generally, the old growth management strategy will take advantage of existing old forest within special resource management areas, habitat linkages, riparian and lakeshore reserves, and forest harvesting landbase exclusions. Where sufficient old forest is not available, OGMAs may be recruited from other age-class and/or resource management categories. **43.9** Develop and implement a deciduous species (e.g., aspen, birch, cottonwood, alder and willow) management strategy which incorporates wildlife, agriculture, range, timber and biodiversity concerns. This strategy will be based on no-net-loss of district-wide deciduous cover and maintenance of deciduous types in deciduous leading stands. Landscape Unit objectives will address management of deciduous leading stands. **43.10** Incorporate new knowledge concerning landscape level biodiversity management, appropriate to the ecology of the planning area, in managing for long-term biodiversity objectives.

General Ecosystem Health - Objectives	Management Strategies
44. Maintain/enhance habitat connectivity at the landscape level across the Lakes District planning area to provide opportunities for the distribution of species, populations and genetic material. ["Biological Ecosystem Networks" (BENs) refer here to the MELP 1:50,000 interpretive ecosystem inventory of the same name. "Forest Ecosystem Networks" (FENs), refer to ecosystem networks to be developed at the Landscape Unit planning level, as per the FPC Biodiversity Guidebook.]	**44.1** Consistent with 43.3 above, establish appropriate linkages among critical wildlife habitat areas, both within and between Landscape Units, through development and maintenance of a network of landscape connectivity corridors which provide opportunities for the distribution of species, populations and genetic material. **44.2** Landscape connectivity corridors will incorporate, wherever possible, areas which are identified for conservation management, are constrained for purposes of forest management, or have limited commercial timber value. These may include protected and special resource management areas, habitat linkages, old growth management areas, lakeshore and riparian reserves, rare ecosystem types, habitat of red/blue listed species, and forested/non-forested areas which have been excluded from the harvesting landbase. **44.3** Management emphasis within landscape connectivity corridors will be placed on maintaining habitat connectivity in order to reduce fragmentation and permit movement and dispersal of plant and animal species. **44.4** Resource development activities within landscape connectivity corridors will be conducted in a manner which maintains the integrity and function of the corridor. Guidelines for operating within corridors will be developed by MELP and MOF, with opportunity for review and comment (as per the provisions of Chapter 6) by the Monitoring Committee. **44.5** Consistent with landscape unit objectives, timber management activities in landscape connectivity corridors will maintain 70% of forest structure and function. Management prescriptions may require a mixture of small scale even and uneven aged silvicultural systems, including openings which very in shape and size.

General Ecosystem Health - Objectives	Management Strategies
	44.6 Where agriculture lease applications intersect with landscape connectivity corridors, agriculture and wildlife values will be integrated at the site scale consistent with Section 4.2 strategies 4.1-4.4 to address biodiversity, wildlife habitat connectivity or ecosystem function issues. **44.7** Land and resource management agencies will take a coordinated, planned approach to access management such that development of linear barriers (i.e. rights-of-way) to wildlife movement within landscape connectivity corridors are minimized. **44.8** "Strong Links," as identified in the Biological Ecosystem Networks (BENs) inventory (Figure 4), are the best available representation of district-wide landscape connectivity requirements. Strong Links will function as interim Forest Ecosystem Networks (FENs), prior to Landscape Unit planning, and as a guide in FEN design. **44.9** Knowledge of landscape connectivity requirements will increase, over time, through development of higher resolution interpretive and field-based inventories. These more detailed inventories will then guide Forest Ecosystem Network design. Management objectives concerning landscape connectivity, however, will remain consistent with LRMP direction.
45. Protect, conserve, and reduce risks to rare, threatened and endangered terrestrial and aquatic species.	**45.1** In cooperation with the provincial conservation data centre, information will be obtained on rare, threatened and endangered species. The information will be used to monitor, protect and conserve species at risk. **45.2** Inventories of key habitat areas for red and blue listed species will be prepared and maintained and will be integrated into land and resource planning and decision-making processes at all levels. **45.3** Red, blue and regionally significant or

General Ecosystem Health - Objectives	Management Strategies
	regionally extirpated species whose habitat is being affected by resource development practices will be evaluated as candidates for designation as identified wildlife species under the FPC. Essential habitats for these species will be designated as either wildlife habitat areas or sensitive areas under the FPC, and addressed in landscape unit objectives.
46. Maintain the quality, integrity and connectivity of dry ecosystem habitats so as to support a diversity of species dependent upon this habitat type.	**46.1** Forest and range management regimes will integrate requirements for dry ecosystem habitat areas. These areas will be mapped and identified in approved range use and forest development plans. Special management practices may be required to meet habitat concerns in these areas. **46.2** Manage forest encroachment (techniques to include prescribed burning where appropriate). **46.3** Develop and implement access plans to reduce motorized access into vulnerable areas and minimize human impact.
Terrestrial Ecosystem Health - Objectives	**Management Strategies**
47. Maintain the regional diversity and a suitable abundance of native terrestrial plant and animal species, and the ecosystems upon which they depend.	**47.1** The coverage, accuracy and resolution of terrestrial ecosystem mapping will be upgraded over time, giving priority to areas of high ecological value. **47.2** Wildlife habitat areas or sensitive areas will be recommended for establishment adjacent to alpine and subalpine environments, specifically the headwaters of Tildesly creek, to provide security/escape cover for goat, caribou and other animals using alpine habitats. **47.3** When threats to local wildlife populations are identified in the annual monitoring report, the Monitoring Committee will review and comment on the issue (as per the provisions of Chapter 6).
48. Maintain the diversity and a suitable abundance of wide ranging carnivore	**48.1** The quantity and quality of wide ranging carnivore habitat

General Ecosystem Health - Objectives	Management Strategies
populations and the ecosystems upon which they depend.	capability/suitability mapping will be upgraded, with a priority on grizzly bears. **48.2** Viable populations of prey species will be maintained through the implementation of the FPC and hunting and trapping regulations. **48.3** Grizzly bear management plans and management areas will be established in accordance with the provincial grizzly bear conservation strategy. **48.4** Grizzly bear management guidelines will be implemented in areas of important habitat capability and known occurrence of grizzly bear (e.g., Sutherland Valley and Klaytahnkut-Fleming). **48.5** Bear/human conflicts will be minimized through relocation, aversive conditioning, access management planning, proper landfill planning and enforcement, and adequate trail and campground design in recreation areas.
49. Maintain caribou habitat (a component of maintaining a viable population).	**49.1** Caribou habitat will be maintained principally by management of key areas as defined in the Special Resource Management Zone (Chapter 4, Section 4.4). Landscape unit objectives and Forest Development Plans will reflect the intent of the subzone designation. **49.2** In areas where caribou habitat overlaps with other ungulate winter ranges, management for caribou will take precedence. **49.3** More detailed strategic plans will identify migration and wintering habitats and will incorporate information on caribou densities, habitat, and movement with a view to avoiding roads (if possible) or minimizing road densities within key areas.
50. Maintain the diversity and viable populations of ungulate species and the habitats on which they depend.	**50.1** The quality of information on species-specific habitat requirements and ungulate habitat capability will be upgraded, over time, through field research and inventory

General Ecosystem Health - Objectives	Management Strategies
	mapping. **50.2** Sensitive resource management practices will be applied to key ungulate winter habitat areas (Chapter 4, Section 4.4). **50.3** Ungulate forage and habitat enhancement measures will be undertaken in key winter range and habitat areas, or as determined through more detailed strategic planning and ongoing Ministry of Environment, Lands and Parks program initiatives. Where undertaken, these initiatives will consider other resource values (e.g., Crown range). **50.4** More detailed strategic planning will incorporate information on ungulate habitats and movement, with a view to reducing stress and displacement of wintering ungulates. **50.5** Road and rail kill of ungulates will be minimized through cooperation between The Ministry of Environment, Lands and Parks and the authorities responsible for design and maintenance of highways and railways, and through driver education.

General Ecosystem Health - Objectives	Management Strategies
Aquatic Ecosystem Health - Objectives	**Management Strategies**
51. Protect, conserve and/or restore aquatic ecosystem functions and processes.	**51.1** Watersheds and wetlands requiring restoration will be inventoried, prioritized and rehabilitated, primarily through the watershed restoration program of Forest Renewal BC Rehabilitation in fish bearing streams will include wild stock population enhancement and measures to restore sources of large organic debris and streamside vegetative cover. **51.2** Undertake watershed assessments to establish sensitivity to development based on: aquatic resources which may be at risk, past and future harvesting rates and patterns, and impact hazards such as potential sediment sources and changes in hydrologic regime. **51.3** Develop watershed specific management strategies to reduce development risks to sensitive watersheds identified by 51.2 as being sensitive to development. **51.4** Inventory and classify lake/lakeshore, wetland, and riparian areas to facilitate both conservation and the development of management strategies and practices. **51.5** Selected lakes, which currently do not contain fish, may be managed to prevent fish introductions so as to maintain their ecological integrity and serve as baseline indicators of these aquatic ecosystems.
52. Ensure the sustainability of fish species diversity and populations, especially wild fish stocks.	**52.1** A strategic fisheries plan will be developed to identify management objectives and strategies for specific fish species. **52.2** Watershed assessment will be performed on significant fish streams, as appropriate, to determine watershed-specific strategies for maintaining/restoring in-stream flows and sediment regimes. Salmon spawning streams will be given high priority.

General Ecosystem Health - Objectives	Management Strategies
	52.3 The quality of fish habitat inventories (including non-sport species) will be upgraded over time, as a basis for identifying and ranking sensitive/critical fisheries areas (e.g., reaches, pools, rearing areas, spawning areas, migration limits) that require protection and site-specific management action.
	52.4 On the basis of inventories, and through landscape level planning, appropriate fish habitats may be designated as Sensitive Areas or be classified as Wildlife Habitat Areas.
	52.5 Roads that cause chronic negative impacts to fish (e.g., sedimentation) will be assessed and priorized for adequate maintenance or permanent de-activation, as part of access planning initiatives.
	52.6 In-stream flows that are adequate to maintain fish stocks will be determined by the proponent. Consideration of these requirements will be incorporated into water licensing mechanisms.

Air and Water Quality

Resource Values and Issues

Air quality within the planning area is relatively good. Exceptions occur downwind of major industrial incinerators (bee-hive burners) associated with industrial wood processing. Smoke from forest fires, slash burning, and forage and habitat enhancement is also an ongoing concern for many residents.

Water quality within the planning area is also relatively good. Water is found in abundance in the Lakes District in numerous wetlands, streams, and lakes. Several of the larger, colder lakes are notable for the purity of their water. Major users of water include industry (e.g., hydro-electric energy, agriculture, and wood processing) and the Village of Burns Lake. The Village water supply is aquifer-based. Water for rural domestic uses, irrigation, stock watering, waterfowl conservation, etc., is typically accessed from surface water sources.

No Community Watersheds have been established at present, although designation may occur over time as lakeshore communities grapple with the effects of increasing *human activity and settlement. The primary objective is to maintain water quality as activity levels increase. Key to this objective will be monitoring and assessment of water resources over time. Major concerns include managing the impacts of human settlement (particularly, management of septic wastes), as well as those of resource development (e.g., sedimentation and water borne pollutants).*

General Management Intent

The Lakes District LRMP adopts the general management direction of maintaining air and water quality throughout the planning area. Air quality will be maintained through compliance with Provincial legislation. Collaboration among those creating, and those affected by, smoke emissions is encouraged to increase awareness of issues and minimize air quality conflicts.

Water quality will be managed through existing water and waste management legislation and regulation, and through the Forest Practices Code (FPC). Ongoing monitoring of community and domestic use watersheds will provide a basis for assessment of water quality. Emphasis will be placed on avoidance of impacts leading to declines in water quality, and/or changes to water quantity and timing of flow in community and domestic use watersheds. Broadly based watershed management direction can be found under Section 3.4, Aquatic Ecosystem Health.

Water Quality Objectives	Management Strategies
53. Maintain water quality, quantity and timing of flow at appropriate levels in community watersheds and watersheds that have significant downstream fisheries or domestic water values.	**53.1** Develop guidelines, as appropriate, to guide timber resource development activities in domestic use watersheds (i.e., non-Community Watersheds). **53.2** Water management plans will be prepared, as appropriate, to guide water licensing decisions and provide information to community development planning and other resource planning processes. **53.3** Roads that cause chronic negative impacts to domestic water use will be assessed and prioritized for maintenance or permanent deactivation as part of access management and planning initiatives. **53.4** Water quality objectives will be defined in terms of measurable attributes. These objectives will then serve as standards or "goal posts" so that the impact of development on aquatic resources can be assessed. **53.5** Where appropriate, employ a full range of management techniques (e.g.,

Water Quality Objectives	Management Strategies
	cattle crossing stations, gravity feed water delivery systems, fencing, natural barriers, etc.) to minimize the decline in water quality and the degradation of streambank, lakeshore and other riparian areas by livestock. Incorporate these techniques in Range Use Plans and Agricultural Lease Development Plans.
Air Quality Objectives	**Management Strategies**
54. Maintain air quality within established national and provincial criteria.	**54.1** Air quality impacts due to industrial emissions and/or forestry, range and wildlife burns will be managed through permits or approvals under the *Waste Management Act, Forest Practices Code* and/or other appropriate legislation and regulations. **54.2** Communities with poor air quality will be given high priority for local air quality monitoring. **54.3** Partnerships between communities and stakeholder groups are encouraged to address air quality concerns and to target actions on localized sources of air contaminants (e.g., agricultural burning, beehive burners).

Access Planning and Management

Resource Values and Issues

Access development, while necessary for purposes of resource development, creates a number of management issues with respect to resource conservation. The creation of access for tenured resource users opens previously inaccessible areas to non-tenured users as well. The most significant consequence of increased access is increased pressures on fish and wildlife populations - most notably, those species with commercial and recreational value and/or sensitivity to interactions with humans.

Timber harvesting and silvicultural activities are the primary catalyst for access development. While timespans for harvesting in an area may be relatively short, access must be maintained where successive silvicultural treatments are planned. The longer a road remains open, the greater the reliance of non-forestry resource users (both tenured and non-tenured) becomes and the more negative the response to *proposed road closures or deactivations. In this way, the Forest Service road network has become a public resource.*

The terrain of the Lakes District presents relatively few obstacles to access for resource development. This creates the potential for an extensive access network throughout the planning area, resulting in concerns over direct loss of productive forest lands as well as loss and/or fragmentation of wildlife habitat. Sedimentation of fish habitat due to road development and/or inadequate road maintenance is also a major concern.

The primary objective in the planning and management of access is to strike a balance between the legitimate needs of resource users and the conservation of significant fish, wildlife, and other resource values. Public awareness and understanding of management strategies underlying access planning and management will be critical in striking this balance.

General Management Intent

The Lakes LRMP adopts the general management direction of maintaining access opportunities for the full range of resource development and user needs while minimizing conflicts with the conservation of sensitive environmental, recreational, and cultural heritage values. An access management strategy will co-ordinate access development amongst the various users while ensuring that future development utilizes existing and/or shared access wherever possible. Access management will incorporate the maintenance of new and existing roads to prevent sedimentation of fisheries habitat. In the interests of sustaining long term forest productivity as well as fish and wildlife habitats and populations, deactivation of roads will be an access management option.

Significant fish, wildlife and other resource values will be identified and protected through site specific strategies such as: identification of the best location for roads, limiting the use or frequency of use during certain periods and, if necessary, restricting access through road closures or deactivations. Access may be prohibited in specific areas where fish or wildlife values are critical to species maintenance.

Road access for resource development is an acceptable use of the land and will proceed subject to LRMP direction and existing Provincial legislation and regulations including the Forest Practices Code (FPC). Access development and management will be consistent the objectives for each resource management zone within this Plan.

Access Planning and Management - Objectives	Management Strategies
55. Access throughout the district should be planned so as to minimize conflicts with habitat values.	**55.1** Access plans will be developed to control the level of access development. This will involve providing guidance for new construction and the deactivation of existing access structures, where appropriate.

	55.2 Access plans will address access to sensitive terrain such as alpine and sub-alpine areas, sensitive wetlands, sensitive rare and endangered plant communities (such as those occurring on steep south facing slopes). Typically, access into these areas will be avoided. **55.3** Circular routes within the Lakes District and connecting to adjacent districts can be potentially detrimental and should be discouraged wherever possible. This applies particularly when other values are paramount. Examples of potential problems include (1) additional traffic and hunting pressures, and (2) greater difficulty in hunting regulation enforcement. **55.4** Standards and procedures for access in key alpine habitats will stress impact mitigation, as they relate to regulated closure, reclamation and rehabilitation. Mitigation measures are to be pre-determined, prior to development approval.

CHAPTER 4

Resource Management Zone Direction

4.1 Land Use Designation

A strategic land use designation system defines broad categories of land use that are applied to different geographic areas. The land use designations are based on underlying resource values which have been identified for their strategic significance. The purpose of designating land use areas is to communicate the desired management direction for the lands and natural resources located within. The Lakes District Land and Resource Management Plan allocates the Crown land base into five main land use designations, or Resource Management Zones (RMZs), as shown on the Resource Management Zone Map (Figure 5).

The land use designations range from protection-oriented land uses (e.g., protected areas), through conservation (e.g., wildlife habitat), to development-oriented land uses (e.g., intensive timber management). The Protection designation provides relatively straightforward land management direction - these areas are managed for protection values, meaning certain land uses (e.g., timber and mineral extraction) are prohibited by law or regulation. The Mineral/Wildlife Management designation provides opportunity for mineral exploration and development while giving consideration to wildlife and conservation values. The Plan's other land use designations (General Resource Management, Special Resource Management, and Agriculture/Settlement zones) incorporate the full range of resource values and uses. The principal difference among them is the relative degree of emphasis on conservation-oriented or development-oriented land uses.

Objectives and strategies were developed for each RMZ (Sections 4.2 - 4.6) to provide the context for resource management activities and guide operational planning and government land management programs and activities throughout the Lakes District planning area.

The Lakes District LRMP is strategic in nature and based on an integrated resource management philosophy. It is neither practical nor beneficial to exhaustively define the specific land uses and activities, or particular resource management standards, that should or should not apply in each resource management zone. The zone descriptions, and the objectives and strategies that follow, are appropriate to a strategic approach to planning. More detailed planning, for example, at the landscape unit or watershed level, will take place as part of local level planning processes.

4.2 Agriculture/Settlement Zone

The intent of the Agricultural/Settlement zone is to identify the area most appropriate for future agricultural development and settlement expansion. The Agriculture/Settlement zone also recognizes the strong historical and current physical inter-relationship between agricultural activities/holdings and areas of human habitation within the planning area. Further, this zone defines management strategies for areas of agricultural activity, and areas with potential for future agricultural development, which are in close proximity to existing and potential settlement.

In this zone, emphasis will be placed on agriculture and settlement while placing a high value on integrated management for wildlife habitat. The zone includes lands that contain important wildlife habitat and zone management will reflect this fact. Where agriculture issues are in conflict with wildlife issues, there is a recognition that both are important and that, at a more detailed scale, wildlife and agriculture concerns will be integrated. In the Agricultural/Settlement zone, agriculture will be given greater emphasis than forestry. Existing long term forestry investments will be identified and accounted for in future agricultural development proposals.

Areas incorporated in this zone include:

- the provincial Agricultural Land Reserve;
- foreshore lands and water source storage areas, that are currently used for agricultural purposes;
- areas of settlement, especially those in rural areas, where it is considered important to retain the rural-agricultural character of the settlements and their surrounding lands.

This zone includes areas that are subject to a separate planning processes called Official Community Plans (OCP). Such lands are primarily planned and managed by local governments under the *Municipal Act*. Local government may also have jurisdiction in areas where other RMZ boundaries cross settlement lands.

This zone is not intended to include all grazing tenures or smaller pockets of arable soils remote from concentrations of human settlement. These latter areas will generally fall into the General and Special Resource Management Zones. Agricultural and settlement development will continue to be considered on suitable lands outside of the Agriculture/Settlement zone subject to the management direction within those zones.

AGRICULTURE/SETTLEMENT ZONE OBJECTIVES	MANAGEMENT STRATEGIES
Resource Planning	
1. To recognize and support the strong inter-relationship between agricultural activities and rural settlement areas and the likelihood of their continued inter-dependence.	**1.1** Use more detailed plans to identify and maintain opportunities for expansion of existing agricultural lands. **1.2** Develop and maintain appropriately detailed inventories of land capability and use within the zone, including improved soils and arability mapping. **1.3** Verify and/or improve the integrity of

AGRICULTURE/SETTLEMENT ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	agricultural inventories based upon the knowledge of local agricultural operators and appropriate government agencies. **1.4** Reduce the loss of productive agricultural lands to non-agricultural development/uses by supporting the purpose and intent of the Agricultural Land Reserve. **1.5** In order to provide a greater degree of certainty for agricultural lease applicants, it is recommended that a detailed inventory of agricultural lands with potential for low land and resource management conflict be produced. The inventory will identify: • key habitats and biodiversity values; • suitable arable soils; • existing forestry investment and potential woodlot opportunities. This inventory is intended to assist in determining the most suitable use of the land and in identifying management measures to address potential land use conflicts. The areas to be inventoried will be defined through the inventory process and will include potential conflict areas both within and outside of the agriculture/settlement zone.
Resource Management	
2. To provide/maintain opportunities for agricultural development and expansion, onto suitable lands.	**2.1** Agriculture/Settlement zone management emphasis will be placed on the provision and maintenance of opportunities for agricultural development and expansion. **2.2** In order to reduce the level of agriculture/ wildlife/forestry land use conflicts, site assessments will be undertaken with respect to agricultural lease applications which attempt to identify:

AGRICULTURE/SETTLEMENT ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	- key habitats and biodiversity values; - suitable arable soils; - existing forestry investment and potential woodlot opportunities. These assessments are intended to assist in determining the most suitable use of the land and in identifying management measures to address potential land use conflicts. The areas to be assessed will be determined through the agricultural lease application process and will include potential conflict areas both within and outside of the agriculture/settlement zone. **2.3** Provide opportunities for existing operations to expand through the issuance of new agricultural tenures. **2.4** Arable lands, as defined under MELP Crown Lands policy for Extensive Agriculture, will generally be given priority over forestry values for purposes of agricultural lease development. **2.5** Maintain/enhance grazing opportunities through development of forage enhancement goals and monitoring of range utilization.
3. To recognize the economic relationship between forestry and agricultural activities.	**3.1** Provide opportunities for small-scale forestry in rural areas through the Small Business Forestry Enterprise, Small Scale Salvage and Woodlot Programs. **3.2** Identify areas with value for long term timber production and integrate this value into detailed land use planning in the zone. **3.3** The state of forest development (i.e., existing silviculture work/investment) will not preclude agricultural lease development on appropriate/suitable lands. **3.4** Silviculture investments and area-based forestry tenures proposed in this

AGRICULTURE/SETTLEMENT ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	zone will be carefully evaluated to avoid areas which may in future be considered for agricultural development. Soil capability for agriculture should be assessed prior to making forestry commitments.
4. Maintain a balance between the agriculture/settlement emphasis of the zone and wildlife habitat within the zone.	**4.1** Develop Range Use Plans over time which accommodate: biodiversity, fish and identified wildlife habitat, riparian areas, and water quality. **4.2** Use range use criteria (range readiness and utilization standards) for livestock grazing which accommodate mule deer winter range requirements. **4.3** Agriculture and wildlife values will be integrated at the site level as per Section 4.2, strategy 1.5 and 2.2, and Section 3.2, strategy 16.3 above. **4.4** Recognizing that wildlife and agriculture/ settlement conflicts are likely to occur, monitor these conflicts, and work toward their resolution over time. Where necessary, forward unresolved conflicts to the IAMC.
5. To minimize wildlife mortality where the coincidence of high value wildlife habitat, high densities of road development, and a high incidence of vehicular road use combine to produce a significant risk of wildlife.	**5.1** Assess roading requirements in the zone and, where appropriate, minimize access at times significant to wildlife through, for example, temporary road de-activation. **5.2** Employ ungulate winter habitat strategies from Section 4.4 (sub-zone 4), as appropriate, in order to reduce ungulate mortality through provision of appropriate security cover and screening adjacent to roads. **5.3** Speed restrictions should be posted where high wildlife activity coincides with road development.

4.3 General Resource Management Zone

The management intent in the General Resource Management Zone (GRMZ) is to balance environmental, economic and social benefits flowing from the resource values within the zone. Activities in this zone will accommodate a mix of resource development (including recreation, tourism, trapping, guiding, agriculture and grazing, and timber and mineral extraction) and resource conservation (including biodiversity, wildlife habitat, rare or endangered species, visual quality and community watersheds) uses and values.

As this zone is intended to integrate multiple resource values, resource management direction is taken from Chapter 3, which provides district-wide direction on the full range of resource values. Areas identified for concentrated timber management activity, or Intensive Timber Management Areas (ITMAs), are specific to the General Resource Management Zone. Due to the particular requirements of intensive silvicultural management and the sensitivity of special management values, ITMAs have been designated as a sub-zone of the GRMZ. Criteria used for identifying these areas, as well as sub-zone specific direction, are outlined below. In applying LRMP direction for ITMAs, the Forest Practices Code will establish the minimum standard for forest resource management practices.

The GRMZ incorporates the majority of the district timber supply area. Lands in this area supply extensive opportunities for most land use activities, including site specific uses associated with settlement, industry and commerce. As it is unrealistic to try to satisfy all resource values in all areas, resource management emphasis may vary throughout this designation, according to the distribution, availability and sensitivity of resource values. Investments in resource development and enhancement are encouraged, although activities may be modified to reflect the presence of other resource values.

This integrated resource management approach seeks to address a diversity of resource values and contributes to the Plan's various economic, social, and environmental objectives. The General Resource Management Zone will also provide substantial benefits in terms of options for intensive forestry investment and development. Chapter 5 contains further evaluative information on the contribution of GRMZ management direction towards socio-economic and environmental objectives for the Lakes District.

GENERAL RESOURCE MANAGEMENT ZONE OBJECTIVES	MANAGEMENT STRATEGIES
Resource Planning	
1. To provide for a full range of resource development and conservation uses and values, in a manner which is both balanced and strategic, through development of more detailed resource management plans.	1.1 Recognize the variability of resource values in terms of area, distribution, availability, and sensitivity and apply local resource management emphases appropriate to the resource values present

GENERAL RESOURCE MANAGEMENT ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	in a given area. Determination of local resource value emphases will take place through more detailed planning processes.
Resource Management	
2. To provide/maintain opportunities for, and strike a balance among, a full range of resource development and conservation uses and values.	**2.1** Management in this zone will accommodate a mix of resource development (e.g., recreation, tourism, trapping, guiding, agriculture and grazing, and timber and mineral extraction), and conservation (e.g., biodiversity, wildlife habitat, rare or endangered species, scenic views and community watersheds) uses and values. Site specific uses associated with settlement, industry, and commerce may also be accommodated. See Chapter 3, General Resource Management Direction, for detailed objectives and strategies. **2.2** In areas that are least constrained by non-timber resource values, implement intensive timber management as per direction under GRMZ1, Intensive Timber Management Areas Sub-zone, below.

GRMZ 1: Intensive Timber Management Areas Sub-Zone

The Lakes District LRMP has identified Intensive Timber Management Areas (ITMAs) with the intent of balancing constraints on timber resource management resulting from objectives and strategies for sensitive environmental and social values elsewhere in the planning area. Intensive Timber Management Areas will be located in those areas where the fewest constraints to intensive timber resource management exist - specifically, outside of the Sensitive Resource Management and Agriculture/Settlement Zones, and the biodiversity and visual quality management areas within the General Resource Management (GRM) Zone.

To develop a strategic level, first approximation of ITMA locations (Figure 6), the *Biological Ecosystem Networks* and *Visual Landscape* inventories were used to identify areas of least constraint to development (i.e., lower biodiversity and visual quality concerns) within the GRM Zone. The resulting ITM areas are distributed in selected "pockets" throughout the GRM zone. The best opportunities for intensive silvicultural practices will occur within these pockets.

ITMA mapping is general in nature and, in combination with LRMP objectives, will guide local level planning in further refining the location of intensive timber management activities. Other characteristics favourable to intensive timber management (i.e., existing infrastructure and investment) will be considered in the refinement of ITMA locations. Other forms of intensive development will be addressed independent of timber management under the provisions of the *Environmental Assessment Act* or other appropriate legislation.

It is the intent of the LRMP to provide strategic direction concerning Intensive Timber Management Areas while maintaining flexibility at the Landscape Unit level for detailed ITMA design. Strategic objectives for ITMAs include:

- enhancing the long-term productivity of the working forest,
- providing opportunities for the practice of long-term, intensive silviculture,
- minimizing conflict with conservation values (e.g., habitat, biodiversity, and visual concerns), and
- providing access for timely silvicultural treatments.

Stewardship of soil, water and air quality, and important environmental or recreational values (e.g., fish and wildlife habitat, stand level biodiversity, and recreational sites or features) that are located within ITMAs will be addressed through application of the Forest Practices Code and other appropriate legislation.

The Lakes District LRMP has identified Intensive Timber Management Areas, being a sub-zone of the General Resource Management Zone, as a key component in the maintenance and enhancement of forest development opportunities in the planning area. This approach to intensive timber management provides opportunities to enhance forest productivity while maintaining the capacity of local ecosystems to sustain long-term forest development activities.

INTENSIVE TIMBER MANAGEMENT SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
Resource Planning	
1. To provide sufficient clarity and directive detail concerning Intensive Timber Management Areas (ITMAs) to support landscape unit and operational level resource planning and management decision-making. These areas will primarily provide opportunities for intensive management of timber resources although constraints to development of other resources would also be at a minimum.	**1.1** Identify Intensive Timber Development Areas through landscape unit and other local level planning processes, within the General Resource Management zone, in accordance with LRMP management direction, the FPC regulatory framework, and planning priorities as identified by MOF. **1.2** "Intensive Timber Management Areas" (ITMAs), as identified in Figure 6, are the best strategic approximation of general areas which do not have other identified values which would be significantly constraining to intensive forms of resource development. ITMAs will function as a guide to the appropriate location of intensive timber management activities both prior to, and during the course of, local level planning. **1.3** Refine areas of best opportunity for intensive timber management, in the course of local level planning, through more detailed identification of areas where: (1) constraints to timber harvesting and other identified values which would be significantly constraining to intensive forms of resource development activities are the least, and (2) conditions for returns on investment in intensive timber management are favourable.
Resource Management	
2. To streamline the permitting process and expedite timber development approvals.	**2.1** Explore opportunities to expedite permitting to the extent that conservation values have been demonstrated to be at low risk in intensive timber development areas.
3. To provide opportunities for enhanced/ intensive timber development, including long-term and intensive silvicultural practices, toward increased volumes of merchantable timber and improved long-	**3.1** Emphasize the enhanced development of timber resources through application of intensive harvesting and silvicultural practices in identified ITMAs.

INTENSIVE TIMBER MANAGEMENT SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
term timber supply.	**3.2** Pursue intensive silvicultural practices, within the regulatory framework of the FPC, including: harvesting, site preparation, artificial regeneration (i.e., planting, seeding), spacing, pruning, fertilization and commercial thinning. **3.3** Apply accelerated backlog (incremental) reforestation, including site preparation, planting and brushing, to harvested areas. **3.4** Maximize efforts to reduce regeneration delay. **3.5** Where applicable, plant improved stock to reduce the green-up period, achieve full site occupancy, and increase long-term yields. **3.6** Apply rigorous density control at the free-to-grow stage. **3.7** Pre-commercial and commercial thinnings will be undertaken where economically feasible and biologically appropriate, to recoup mortality losses, improve timber quality and increase short-term timber supply. **3.8** Effective vegetation management practices will be applied, possibly including herbicides to control competing vegetation and enhance growth of crop species. **3.9** Higher utilization standards may apply (within the bounds of long-term sustainable timber productivity and basic biodiversity requirements). **3.10** Harvest on the basis of merchantibility in the absence of other harvesting priorities. **3.11** Intensive forest health surveys and effective pest management techniques will be applied to protect timber values and silvicultural investments, in accordance

INTENSIVE TIMBER MANAGEMENT SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	with FPC requirements, while minimizing impacts on significant non-timber resource values. 3.12 Within these areas, emphasis will be placed on increasing the timber harvesting land base through: • development and application of new and innovative harvesting technologies, • increased utilization of stands that have been excluded (problem forest types), and • minimization of site degradation. 3.13 Harvest openings may exceed 60 ha where designed to simulate Natural Disturbance Type 3 (NDT3) fire maintained forest ecosystems.

4.4 Special Resource Management Zone

The Special Resource Management Zone (SRMZ) emphasizes conservation-oriented land uses over development-oriented land uses. This land use designation incorporates areas with high concentrations of regionally significant and sensitive resource values, such as biodiversity, critical fish and wildlife habitat, rare or endangered species, and locally important ecosystem and recreation features. In this zone, the resource management priority is to conserve the integrity of the numerous special and sensitive values that are known to exist in those areas. Direction concerning other resource conservation values (e.g., ecosystem management and fisheries habitat) is found in Chapter 3, Section 3.4.

Due to the unique nature and differing management requirements of the identified conservation values, the SRMZ has been divided into four sub-zones (Table 1). The specific locations of those resource values are identified in Figures 7 through 10. Management direction applicable throughout the SRMZ, as well as sub-zone specific direction, can be found in this Section. Resource management guidelines describe, for a particular sub-zone, the type and level of management practices and standards (including where relevant: timing, nature, location and degree of resource development) recommended in orderto conserve the integrity of the values for which the sub-zone was developed. The Lakes District LRMP may indicate rigorous resource conservation measures in relation to specific conservation objectives consistent with the Forest Practices Code.

Resource development and extraction opportunities (e.g., logging, mineral exploration and mining development) exist and are acceptable activities under the SRMZ designation within the constraints. Conservation objectives and strategies, however, will provide the context for extractive resource development activities. Relative to the Agriculture/Settlement and General Resource Management designations, resource development proposals within the SRMZ are more likely to have activities modified and/or conditions attached due to the greater concentration of sensitive conservation-oriented values found there.

This conservation management emphasis with respect to sensitive resource values contributes in a significant way to the Plan's environmental conservation objectives, particularly in terms of general biodiversity maintenance and the conservation of key habitat areas for maintenance of species health. This approach also contributes substantially to district recreational and tourism objectives, as well as to local economic diversification. Chapter 5 contains further evaluative information on the contribution of the SRMZ management direction towards environmental and socio-economic objectives for the district.

Table 1 Special Resource Management Sub-Zones

Sub-Zone	Conservation Emphasis	Management Area
SRMZ 1	Backcountry Lakes	Figure 7
SRMZ 2	Recreation Emphasis	Figure 8
SRMZ 3	Caribou Migration Corridor	Figure 9
SRMZ 4	Ungulate winter habitat	Figure 10

Note: Where values overlap, the most restrictive requirements will apply with the exception of the Caribou Migration Corridor where requirements for Caribou management will apply.

SPECIAL RESOURCE MANAGEMENT OBJECTIVES	MANAGEMENT STRATEGIES
Resource Planning	
1. To provide specific resource management guidelines for key wildlife and recreation values in order to supply sufficient clarity and directive detail to support operational level resource management decision-making.	1.1 Resource managers will take advantage of existing guidelines where appropriate. Where resource management guidelines do not exist or guidance for a sub-zone is insufficient, resource management guidelines will be developed by responsible agencies in consultation with the Monitoring Committee (as per the provisions of Chapter 6) and affected community stakeholders. These guidelines will typically provide direction with

SPECIAL RESOURCE MANAGEMENT OBJECTIVES	MANAGEMENT STRATEGIES
	respect to location, preferred type, distribution and attributes of forest cover, as well as provisions for access management. **1.2** Resource value maps (figures 7-10), are based on resource inventory and will be used in tandem with the guidelines to show the recommended spatial extent of guideline application. **1.3** Where resource management guidelines overlap on the ground, the most constraining guideline should be implemented for that area in order to better sustain all resource values. An exception to this strategy is the Caribou Migration Corridor, where requirements for Caribou management will apply.
Resource Management	
2. To conserve one or more wildlife habitat or recreation values by ensuring that the factors that create that value are maintained or enhanced. (e.g., maintaining visual quality in an area of recreation value or enhancing browse in ungulate habitat).	**2.1** Resource management emphasis will be placed on maintaining/enhancing habitat and recreational resource values for which the resource management zone was established. Table 1 above outlines priority resource conservation values. **2.2** Opportunities for experimentation with alternative management practices and standards will be investigated as new knowledge becomes available. **2.3** Review existing silviculture prescriptions to determine consistency with the objectives and strategies of this zone. Strive to implement measures for rehabilitation or enhancement of previously harvested sites or affected habitats, through modifications to silvicultural plans, in order to meet wildlife habitat and recreation objectives.
3. To provide opportunities for low impact and low intensity resource development standards in keeping with a "light-hand-	**3.1** Conduct extractive and agricultural resource development within the special resource management zone which

SPECIAL RESOURCE MANAGEMENT OBJECTIVES	MANAGEMENT STRATEGIES
on-the-land" resource management approach.	conforms with the special resource management objectives and strategies outlined both above and in the sub-zones below. **3.2** By consent, or upon renewal, existing resource development operating conditions may be amended by approval agencies to comply with the requirements of resource management guidelines developed to maintain and/or enhance special resource management values.

SRMZ 1: Backcountry Lakes Sub-zone

The Lakes District is unique in both the large number of lakes (well over a thousand) to be found here, and the high accessibility of the landscape for purposes of resource development. Despite the large number of lakes in this district, most of significant size have already been accessed. In other areas of the province, lakes managed for backcountry attributes are typically those which are located in areas inaccessible or inoperable for most forms of development. Given the relative ease of accessibility for resource development, the Lakes District LRMP has chosen to provide clear direction on maintaining backcountry attributes on a number of the larger remaining unaccessed lakes.

Backcountry Lakes provide opportunities for maintenance of conservation (e.g., aquatic ecosystems, fish and wildlife habitat, water quality) and backcountry recreation (e.g., high scenic quality, remote setting, limited access, minimal disturbance) values. They also provide opportunities for development, in a manner which minimizes impacts to conservation and recreation values, including timber harvesting (with an emphasis on forest health) and mineral exploration and development. Site specific assessment of mineral development proposals will take place under the *Environmental Assessment Act* or *Mines Act* where appropriate to provide an opportunity for public review.

The objectives and strategies for Backcountry Lakes, outlined below, provide strategic direction with respect to management options and apply to all backcountry lake areas identified in Table 2. More detailed management planning for each area will be undertaken through local level planning processes.

Table 2 Backcountry Lakes

L1	Fleming Lake	L6	Bob Lake
L2	Guliwing Lake	L7	Trout Lake
L3	Henrietta Lake Cluster	L8	Sather Lake
L4	Haney Lake	L9	Uduk Lake
L5	Mackenzie Lake	L10	Chief Louis Lake

BACKCOUNTRY LAKE SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
Resource Planning	
1. To develop detailed management plans, over time, for each Backcountry Lake in order to ensure the maintenance of conservation (e.g., aquatic ecosystems, fish and wildlife habitat, water quality) and backcountry recreation (e.g., scenic quality remote setting, limited access, minimal disturbance) values within these areas.	**1.1** Backcountry Lake management plans which are consistent with LRMP direction will be developed through the MOF recreation program with the benefit of public and inter-agency participation. Among other things, the plans will define lake-specific management objectives, acceptable uses, limits of acceptable change, zoning, and other strategies that will minimize conflicts and help ensure the integrity of important Backcountry Lake values. Management plans will also address forest health issues. **1.2** Backcountry Lake boundaries are to be defined by steep local topography (i.e., heights-of-land) and/or the semi-primitive recreation management zone (i.e., distance from lakeshore of 1km). Figure 7 depicts the Backcountry Lake boundaries as recommended by the Lakes District LRMP. **1.3** Planning processes will include consultation with tourism industry representatives in order to examine potential commercial backcountry recreation opportunities within Backcountry Lake areas. **1.4** Backcountry Lakes will be a priority for lake inventory data collection concerning fisheries, wildlife, biodiversity,

BACKCOUNTRY LAKE SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	recreation, and visual resource values.
Conservation Management	
2. To provide/maintain conservation (i.e. aquatic ecosystems, fish and wildlife habitat, water quality) and backcountry recreation (i.e. scenic quality, remote setting, limited access, minimal disturbance) values within Backcountry Lake areas.	**2.1** Backcountry Lake management emphasis will be placed on conservation of the lake ecosystems, resource values and natural features for which Backcountry lake areas were established. **2.2** Opportunities to establish benchmarks for scientific study and conservation management of lake ecosystems will be investigated. **2.3** Conservation of rare, endangered and at risk species (and their habitats), will be a management priority within Backcountry Lake areas. Where conservation and recreation values are in conflict, maintenance of conservation values will be the management priority. **2.4** Management emphasis for Chief Louis and Uduk Lakes will be on caribou migratory habitat as per the Caribou Migration Corridor Special Resource Management Sub-Zone. Backcountry Lake objectives will be secondary to migration corridor objectives.
Recreation Management	
3. To provide/maintain a backcountry or semi-remote natural environment recreation experience.	**3.1** Manage Backcountry Lakes for a low impact backcountry recreation experience, based on a semi-primitive non-motorized Recreation Opportunity Spectrum (ROS) classification. **3.2** Detailed provisions concerning motorized access for tourism and recreation will be determined with the benefit of public input through local planning processes. Sensitive conservation values will override motorized access concerns. Where motorized access is permitted, this will be limited to vehicles not requiring roaded access.

BACKCOUNTRY LAKE SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	3.3 No roaded access will be provided for the recreating public within the boundary of Backcountry Lakes. Recreation access will be limited to hike-in or recreational trails. Where appropriate, existing access and trails within Backcountry Lake areas may be closed or decommissioned to support backcountry recreational experiences. Similarly, new recreational access may be limited to maintain the quality of the recreational experience. **3.4** Historical access of tenured (licensed) resource users into backcountry lakes will continue. In the event that existing trails are incompatible with backcountry lake objectives, discussions will be held with the tenured user to integrate the objectives of the user and the LRMP. **3.5** Levels of recreational use and associated impacts will be monitored to ensure human impacts remain with the limits of acceptable change. Management strategies will be altered, where necessary, to maintain the backcountry qualities of an area. **3.6** Backcountry Lakes are Significant Visual Areas (as defined in Chapter 3 objective 40). It is recommended that, given the intent to provide a backcountry experience, visual areas adjacent Backcountry Lakes be managed according to a preservation visual quality objective, and other visual areas within Backcountry Lake boundaries be managed to a retention visual quality objective. **3.7** Visual areas outside of Backcountry Lake areas, and visible from a Backcountry Lake, will be managed according to visual quality objectives identified in Section 3.3 **3.8** New physical commercial infrastructure for tourism and recreation

BACKCOUNTRY LAKE SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	(i.e., roads, lodgings, staging areas, etc.) will be directed outside of Backcountry Lake areas. **3.9** In the event a backcountry lake loses its natural environment function due to an unforeseen industrial activity (e.g., beetle salvage), the Monitoring Committee (as per the provisions of Chapter 6) in conjunction with government will propose an alternate lake to be managed for a natural environment experience as a backcountry lake.
Resource Development	
4. To allow for resource development in a manner which minimizes impact to conservation (e.g., aquatic ecosystems, fish and wildlife habitat, water quality) and backcountry recreation (e.g., scenic quality, remote setting, limited access, minimal disturbance) values within Backcountry Lake areas.	**4.1** Within Backcountry Lake areas, ensure that management of resource development is consistent with the maintenance of identified conservation and backcountry recreation values. **4.2** The duration and extent of resource exploration and development disturbances will be designed to reduce impacts to identified conservation and backcountry recreation values. **4.3** Maintenance of visual quality, as per 3.4 above and Appendix 5, will be a major consideration in review and approval of permitted activities. In response to major natural disturbance events or mineral development proposals visual quality objectives may be revised, on a site specific basis, based on sound management practices and principles of good visual design. **4.4** Timber harvesting will focus, as a first priority, on forest health management - particularly, reactive removal of Mountain Pine Beetle infested trees. **4.5** Forestry practices such as mixed species management (including deciduous), uneven aged management,

BACKCOUNTRY LAKE SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	variable size and shape of harvest patches, and modified silviculture standards, will be pursued in order to better maintain conservation and recreation values. Generally, openings for even age systems will be restricted in size. **4.6** Surface access for resource exploration/ development may be permitted provided it is located, constructed, and managed so as to minimize impacts on conservation and recreation values. Generally: • use of existing access is to be maximized; • less permanent/intrusive forms of access (i.e., skid trails) are preferred to more permanent/intrusive forms (i.e., roads); • restrictions on roaded access will increase with proximity to lakeshores; • full reclamation/rehabilitation of new access will be required immediately following completion of activities; • access controls will be required where: access structures are maintained for seasonal work or multi-year developments (e.g., mineral/energy exploration and development). **4.7** Access management provisions may include skid trails, winter roads, reduction of right-of-way widths, temporary access, road deactivation, seasonal road closures, gating and monitoring, and visual screening of key recreational features from roadways.
Natural Occurrences	
5. To protect Backcountry Lake values and adjacent resource values and private	**5.1** Fire and forest health management activities within Backcountry lake areas

BACKCOUNTRY LAKE SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
property, as appropriate, from natural occurrences (e.g., fires, insects, and forest disease) in Backcountry Lake areas.	will be carried out according to "light-hand-on-the-land" management approach. Where the severity of the disturbance makes it necessary to exceed such standards, full rehabilitation of management access and structures, including re-contouring of disturbed areas, will be undertaken.

SRMZ 2: Recreation Emphasis Sub-Zone

The Lakes District is a landscape of rolling topography, numerous lakes, streams, wetlands, and abundant fish and wildlife resources. This natural heritage supports a wide range of outdoor, natural environment-based recreation activities undertaken by residents and non-residents alike. While recognizing the general need to integrate outdoor recreation activities with resource development, the Lakes District LRMP has chosen to identify specific areas (selected areas of recreation interest) of high existing and potential recreation value and provide direction on maintaining opportunities for natural environment recreation experiences. Together, these areas of recreation interest make up the Recreation Emphasis sub-zone as shown in figure 8.

Areas of recreation interest (hereafter referred to as recreation areas) are recognized for their significant public recreational values and ability to provide for a range of natural environment recreational experiences. LRMP direction seeks to maintain recreation resource values (e.g., natural appearing environment, visual quality, appropriate access) and protect key recreational features (e.g., geological, biological, hydrological and heritage features) for which recreation areas were identified. Enhancement of recreation values (e.g., recreation sites/trails/facilities) is encouraged. Opportunity is provided for resource development (e.g., timber, minerals and energy) in a manner which avoids, minimizes, or mitigates impacts to recreation values. Site specific assessment of mineral development proposals will take place under the *Environmental Assessment Act* or *Mines Act* where appropriate to provide an opportunity for public review.

The objectives and strategies for recreation areas outlined below, provide strategic direction with respect to management options and apply to all recreation areas identified in Table 3. More detailed management planning for each area will be undertaken through local level planning processes.

Table 3 Recreation areas

R1	Nez Lake East	R9	Tchesinkut Lake East
R2	China Nose	R10	Knox Lake
R3	Kager-Star Lakes	R11	Guyishton Lake
R4	Burns Lake South	R12	Takysie Lake
R5	Boo Mountain - Fish Lakes	R13	Cheslatta Lake North
R6	Augier Lava Dome	R14	Moose Lake
R7	Eagle Creek Opal Beds	R15	Uncha-Binta-Knapp Lakes
R8	Nourse-Allin-Maxan Trail	R16	Taltapin Lake - Pinkut Creek

RECREATION EMPHASIS SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
Resource Planning	
1. To develop management plans, over time, for each recreation area in order to ensure the maintenance of public recreation values and the high quality recreation opportunities available within these areas.	1.1 Local management plans will be developed for each recreation area consistent with LRMP direction, and relevant provincial guidelines. 1.2 Recreation areas will be managed in a manner consistent with a natural environment recreation experience, and a level of sensitivity appropriate to identified recreation features/activities. 1.3 Recreation area management plans will be developed with the benefit of public and inter-agency participation. Among other things, the plans will define area specific management objectives, acceptable uses, limits of acceptable change, zoning, and other strategies that will minimize impacts and conflicts and help ensure the integrity of important recreation values.
Resource Management	
2. To maintain public recreational values and opportunities for a range of natural environment recreational experiences, as well as protect key recreational features.	2.1 Management emphasis will be placed on maintaining recreation resource values and protecting key natural recreational features for which recreation areas were

RECREATION EMPHASIS SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	established. **2.2** Key natural features within recreation areas will be identified through public input and field inventory and, where necessary, management zones and site-specific strategies will be established for their conservation. **2.3** Recreations areas may be enhanced for recreational use through development of recreational sites, trails, and commercial backcountry recreation facilities, in a manner consistent with a natural environment experience, the limits of acceptable change, and public demand. **2.4** Levels of recreational use and associated impacts will be monitored to ensure human impacts remain within the limits of acceptable change. Management strategies will be altered, where necessary, to maintain the natural environment qualities of recreation areas. **2.5** Provisions concerning non-motorized access, or, the type and degree of motorized access, will be determined with the benefit of public input through recreation management planning processes. **2.6** Recreation areas are to be managed as visual areas. Visual quality concerns will be addressed in a manner consistent with management direction in Section 3.3, and the *Visual Landscape Management Strategy* found in Appendix 5.
Resource Development	
3. To allow for resource development in a manner which minimizes impact to public recreational values and natural environment recreational opportunities found within identified recreation areas.	**3.1** Within identified recreation areas, ensure that management of other resources is consistent with recreation management goals. **3.2** Logging adjacent to previously harvested areas may be considered once

RECREATION EMPHASIS SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	the harvested area has achieved visually effective green-up (generally, a height range of between 3 and 11 metres). Higher standards will apply to areas where recreational values are higher. **3.3** Alternative forestry practices such as mixed species management (including deciduous), uneven aged management, variable size and shape of harvest patches, and modified silviculture standards, will be pursued in order to better simulate natural forest conditions. Generally, openings for even age systems will be restricted in size. **3.4** Access will be planned to minimize long-term impact on and/or complement recreational objectives. Management provisions may include: winter roads, reduction of right-of-way widths, temporary access, road deactivation, seasonal road closures, and visual screening of key recreational features from roadways.
Natural Occurrences	
4. To protect Recreation Emphasis sub-zone values and adjacent resource values and private property, as appropriate, from natural occurrences (e.g., fires, insects, and forest disease) in Backcountry Lake areas.	**4.1** Fire and forest health management activities within recreation areas will be carried out according to "light-hand-on-the-land" management approach. Where the severity of the disturbance makes it necessary to exceed such standards, full rehabilitation of management access and structures, including re-contouring of disturbed areas, will be undertaken.

SRMZ 3: Caribou Migration Corridor Sub-Zone

The provincially significant Tweedsmuir-Entiako caribou herd is found in the southernmost portion of the Lakes District planning area. In summer months, they are generally found in northern Tweedsmuir Park in alpine and forested habitat. In late fall, the caribou migrate to lower elevation wintering habitat located south and east of Tetachuck lake (Entiako area) and covering portions of both the Lakes and

Vanderhoof Forest Districts. The migration corridor (Figure 9) traverses active resource development areas south of Ootsa lake and Intata Reach, with caribou use generally concentrated in staging areas south of Uduk and Chief Louis Lakes and south of the Chelaslie River. The migration corridor is also used as an alternate winter range.

The caribou migration corridor is recognized as significant to the long term viability of the Tweedsmuir-Entiako herd. LRMP direction for the corridor area emphasizes the conservation of caribou migratory and winter range habitat values. The primary objective is to provide/maintain quality caribou habitat and movement opportunities which enable caribou migration during spring and autumn, and provide for winter range. Opportunity is provided for resource development (e.g., timber, minerals and energy) in a manner which minimizes impact to caribou habitat values. Site specific assessment of mineral development proposals will take place under the *Environmental Assessment Act* or *Mines Act* where appropriate to provide an opportunity for public review.

A number of studies have been undertaken on the Tweedsmuir-Entiako herd which have helped to inform the Resource Council regarding appropriate management actions (Hatler 1985, Cichowski 1989, Cichowski & Banner 1993, Lance 1995, Steventon 1996). An LRMP sub-committee was created in 1995 to recommend management options for both the caribou migration corridor and wilderness recreation opportunities to the Resource Council. The recommendations (See: *Chelaslie Caribou Migration Corridor Management Strategy*, Appendix 3), were used by the Resource Council to formulate strategic direction, as outlined below, with respect to the caribou migration corridor.

CARIBOU MIGRATION CORRIDOR SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
Resource Planning	
1. To provide specific resource management guidelines for caribou migration corridor values in order to supply sufficient clarity and directive detail to support operational level resource management decision-making.	**1.1** The Chelaslie caribou migration corridor will be managed in a manner consistent with the *Chelaslie Caribou Migration Corridor Management Strategy* (Appendix 3) (with the exception of objective 3 of that appendix on which no consensus could be reached). The caribou migration corridor consists of Areas A, B, C, D and E (Figure 9). Areas A, B, C and D fall within this Special Resource Management Sub-Zone. Area E, falls within the General Resource Management Zone (see Section 3.4, Objective 49). **1.2** Forest development plans will address caribou habitat requirements in terms of

CARIBOU MIGRATION CORRIDOR SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	seral stage distribution, caribou passability, and the timing, nature, location and degree of timber harvesting activity such that the quality of caribou habitat is optimized. **1.3** The Ministry of Environment, Lands and Parks and the Ministry of Forests will have joint approval authority over all Forest Development Plans within the High and Very High Use Areas (areas B, C, and D) of the migration corridor.
Conservation Management	
2. To provide/maintain quality caribou habitat and movement opportunities which enable caribou migration during spring and autumn, and provide for winter range.	**2.1** Management emphasis in the caribou migration corridor will be placed on the conservation of caribou migratory and winter range habitat values. **2.2** Seral stage distribution targets outlined in the *Chelaslie Caribou Migration Corridor Strategy* indicate the minimum requirements for old seral forest cover and the maximum allowance for young seral forest cover. Determination of seral distributions will incorporate both natural occurrences and industrial activities. **2.3** Future timber harvesting will be restricted to caribou-impassable timber areas, as outlined in the *Chelaslie IRM Management Report*, with exact harvesting locations to be determined through the forest development planning process. **2.4** Apply an adaptive management approach to development based on research into recovery of lichen from disturbance, and caribou movement and habitat use over time with respect to resource development. **2.5** Address herd management issues other than habitat management (e.g., low recruitment, predation, poaching) to enable the population to thrive and potentially

CARIBOU MIGRATION CORRIDOR SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	increase
Resource Development	
3. To allow for resource development in a manner which minimizes impact to caribou habitat values.	**3.1** Within the caribou migration corridor ensure that management of resource development is consistent with the maintenance/enhancement of identified caribou habitat values. **3.2** The duration and extent of resource exploration and development disturbances within high and very high use areas will be managed to minimize impacts to identified caribou habitat values. **3.3** Timber harvesting within very high use areas will focus, as a first priority, on forest health management – particularly, reactive removal of Mountain Pine Beetle infested trees. Forest management beyond forest health activities will be directed toward the maintenance and enhancement of caribou habitat values. **3.4** Maintain forest cover associated with good lichen sites and when harvesting in very-high-use areas through use of alternative harvesting systems (e.g., selection and partial cutting systems). **3.5** Through harvest pattern and scheduling, avoid fragmentation of old forest and maintain a variety of travel options throughout the area. **3.6** In development planning and silvicultural prescriptions, retain good terrestrial or arboreal lichen habitat. **3.7** Schedule harvesting activities to minimize human activity when greatest use of the area by caribou occurs. **3.8** Surface access within very high use areas should be minimized. Where alternatives do not exist, temporary surface access structures may be permitted

CARIBOU MIGRATION CORRIDOR SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	provided they are located, constructed, and managed so as to minimize impacts on caribou habitat values. Generally: • use of existing access is to be maximized; • less permanent/intrusive forms of access (i.e., skid trails) are preferred to more permanent/intrusive forms (i.e., roads); • access controls (i.e., gates) will be required on all access structures during periods of caribou migration and occupancy. • full reclamation/rehabilitation of new access will be required following completion of activities.
Natural Occurrences	
4. To protect caribou values and adjacent resource values and private property, as appropriate, from natural occurrences (e.g., fires, insects, and forest disease) in caribou migration corridor areas.	**4.1** Forest health management within the caribou migration corridor will be managed in a manner consistent with the *Chelaslie Caribou Migration Corridor Management Strategy* (Appendix 3). **4.2** Fire and forest health management activities within very-high-use areas of the caribou migration corridor will be carried out according to "light-hand-on-the-land" management approach. Where the severity of the disturbance makes it necessary to exceed such standards, full rehabilitation of management access and structures, including re-contouring of disturbed areas, will be undertaken.

SRMZ 4: Ungulate winter habitat Sub-Zone

Ungulate species are of special significance to the Lakes District in terms of species biodiversity, the natural heritage of the area, and their contribution to the recreation and tourism industries. Ungulate species in the planning area include: caribou, moose, mule deer, and mountain goat. Caribou migratory and winter range concerns are addressed in Sections 4.4 sub-zone 3 and Section 4.5 respectively. Special Resource

Management Sub-Zone 4 is concerned with the winter habitat of moose, mule deer, and mountain goat.

As ungulate populations move through their annual cycles, the factor which most constrains those populations is the availability of winter habitat (range). Some important attributes of ungulate winter habitat include: the availability of security cover, snow intercept cover, thermal cover, and forage opportunities. Critical ungulate winter habitat for identified species includes:

- moose - lowland riparian areas where forage is available even under severe (i.e., deep snow) winter conditions,
- mule deer - steep south facing slopes, typically associated with lakeshores, which have shallow snow accumulations and which become snow-free in early spring,
- mountain goat - exposed southwest facing slopes in alpine or canyon areas with ready access to escape (i.e., very steep) terrain.

Ungulate winter habitat is recognized as significant to the long term viability of ungulate species within the planning area. LRMP management direction seeks to maintain/enhance viable winter range habitat areas for populations of ungulate species including mule deer, moose, and mountain goat. Opportunity is provided for resource development (e.g., timber, minerals and energy) in a manner which minimizes both impacts to ungulate winter habitat values, and displacement of ungulates as a result of poaching and development activities within designated winter ranges. Strategic direction with respect to ungulate winter habitat is outlined below.

UNGULATE WINTER HABITAT SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
Resource Planning	
1. To provide specific resource management guidelines for ungulate winter habitat values in order to supply sufficient clarity and directive detail to support operational level resource management decision-making.	1.1 Resource development plans will address ungulate winter habitat requirements in terms of the location, preferred type, distribution and attributes of forest cover, as well as provisions for access management, needed to maintain suitable winter range habitat conditions for the various species and populations of ungulates found in the district. 1.2 Ungulate winter habitat areas for moose, mule deer and mountain goat (Figure 10) form the geographic extent for the application of special resource management, ungulate winter habitat management guidelines. 1.3 Based on the best available information regarding specific winter

UNGULATE WINTER HABITAT SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	range locations, where deer winter range overlaps with moose winter range, management priority will be placed on deer winter range. **1.4** Improve the extent and accuracy of ungulate winter habitat inventory, over time, through field-based ecosystem mapping.
Resource Management	
2. To maintain/enhance viable habitat areas for populations of ungulate species including mule deer, moose, and mountain goat.	**2.1** Manage the identified winter ranges for the optimal amount, quality and distribution of security cover, snow interception cover, thermal cover, and forage opportunities. These habitat management objectives will vary according to the target species, local climate and residual habitat conditions. **2.2** Consistent with provincial biodiversity guidelines, forest habitat cover should be designed to maintain connectivity, interior forest conditions, and edge attributes most suitable to ungulates. **2.3** Management efforts to enhance the area, suitability and carrying capacity of identified winter range will employ techniques designed to simulate the natural conditions of fire maintained forest ecosystems. **2.4** The requirements of other species, including large carnivores, should be incorporated into the management of ungulate winter habitat areas.
3. Maintain/enhance mule deer winter range.	**3.1** Management of deer winter range will focus on the maintenance of canopy closure, forage and security cover values. An adequate level of canopy closure is required to maintain low snow depths. **3.2** Hiding and Thermal cover will be maintained around south facing slope

UNGULATE WINTER HABITAT SUB-ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	habitats to provide security for ungulates in these high value winter range areas. **3.3** Access management will focus on avoiding access to steep south facing slopes to protect the integrity and quality of habitat. **3.4** On native grassland habitats, ensure range use plans meet mule deer winter range requirements. Restrictions on range use may be required in certain critical winter range habitats.
Resource Development	
4. To allow for resource development in a manner which minimizes both impacts to ungulate winter habitat values, and displacement of ungulates as a result of poaching and development activities within designated winter ranges.	**4.1** Within identified winter ranges, ensure that management of other resources is consistent with habitat management goals for ungulates. **4.2** Forestry practices such as mixed species management (including deciduous), uneven aged management, variable size, shape and dispersement of harvest patches, and modified silviculture standards, will be pursued in order to better simulate natural forest conditions. **4.3** Access development and use will be managed in a manner consistent with Access Management direction provided in Sections 3.2 & 3.4, in order to minimize ungulate displacement, habitat degradation or loss, and vulnerability to over-hunting or poaching. Management provisions will include temporary access, road deactivation, seasonal road closures, and visual screening of habitat areas and openings along roadways. **4.4** Maintain and enhance native browse species (i.e., wild rose, Saskatoon berry, red osier dogwood, willow etc.) through range and silviculture planning and practices.

4.5 Mineral/Wildlife Management Zone

The Mineral/Wildlife Management Zone (as shown in figure 5) lies along the western boundary of the planning area and is recognized as having high wildlife and mineral values. The management intent of the Mineral/Wildlife Management Zone is to provide an opportunity for mineral exploration and development while giving consideration to the wildlife values present in the zone. To achieve this intent, timber harvesting will only be allowed for purposes associated with approved mineral exploration and development. The zone is divided into three components. The Lindquist area (5,165 hectares) and Chikamin area (4,262 hectares) are reserved from alienation except for mineral exploration and development purposes through the establishment of a Map Reserve under Section 16 of the *Land Act*. A 15 hectare area north of the Lindquist area is approved for administration under the *Environment and Land Use Act* to accommodate a potential mineral access road and camp.

Gold, silver, copper and zinc occurrences have been the focus of mineral exploration and development in the zone. In the Chickamin Area, small scale development on polymetallic veins has occurred dating back to 1916. In the Lindquist area, exploration dates back to the 1930's with activities including development of a large camp, access road from Whitesail Lake, diamond drilling and underground development work of a gold-silver deposit.

In association with the existing Tweedsmuir Park and the adjacent area identified for new protection (Tweedsmuir Park Addition) the area provides: critical calving and migration areas for the 400-500 member Tweedsmuir-Entiako caribou herd, grizzly bear habitat, and supports one of a very few intact predator-prey systems in the province. The Chikamin valley provides a high quality recreation experience including flora, wildlife, and 200 million year old fossils. The Chikamin valley is part of the viewscape from Eutsuk Lake (an important entry point into Tweedsmuir Park).

Of the zone's 9427 ha, a total of 3200 hectares are currently held under mineral claims. The Mineral/Wildlife Management Zone boundary encompasses all of the existing mineral claims and extends beyond creating a surrounding buffer of approximately one claim block-width.

MINERAL/WILDLIFE MANAGEMENT ZONE OBJECTIVES	MANAGEMENT STRATEGIES
Resource Planning	
1. To recognize the presence and coordinate the management of both mineral and conservation uses and values	1.1 All applicable exploration proposals within the areas shall be subject to an enhanced referral to BC Parks by the

MINERAL/WILDLIFE MANAGEMENT ZONE OBJECTIVES	MANAGEMENT STRATEGIES
within the zone.	Ministry of Energy and Mines. These referrals shall provide the opportunity for BC Parks to consult with and provide recommendations to the Ministry of Energy and Mines regarding: • timing of exploration and/or development work to avoid impact on grizzly bear and Caribou; • reclamation provisions; • minimization of impacts from exploration and/or development activities on grizzly bear, caribou and recreation values in the area adjacent to the height of land between Chikamin Valley and Eutsuk Lake drainage; • the location of access trails and roads, and • any other aspect of a development proposal for which BC Parks may have concerns. **1.2** Should disputes arise from the outcome of the referral, then face-to-face discussions at the appropriate technical and senior levels between staff of both ministries will occur, as required, to address and resolve outstanding issues. **1.3** BC Parks shall be notified when *Mines Act* approval is granted for exploration/development work within the areas and be provided a copy of the permit. **1.4** Final decision on permit conditions remain with the statutory decision maker under the Mines Act.
Resource Development	
2. To provide development opportunities for a full range of mineral resources and or claims.	**2.1** Existing mineral claims within the areas shall remain in good standing unless withdrawn or allowed to lapse by the claim holder. **2.2** New mineral claims may be staked by

MINERAL/WILDLIFE MANAGEMENT ZONE OBJECTIVES	MANAGEMENT STRATEGIES
	existing or new claimants. **2.3** All prospecting and initial stage development work shall be completed in compliance with the Mineral Exploration Code (Mx Code).
Resource Conservation	
3. Reduce development impacts on wildlife and other recognized conservation values.	**3.1** Minimize impacts on wildlife, particularly Caribou and grizzly, through the appropriate timing of exploration and development activities including the timing and location of roads and trails. **3.2** Minimize the visual impacts of exploration and development activities between the Chikamin Valley and Eutsuk Lake drainage. **3.3** BC Parks, Ministry of Environment Lands and Parks – Skeena District to provide recommendations on levels of reclamation and bonding appropriate to the conservation values being affected.

4.6 New Protection Zone

One of the purposes of sub-regional land use planning processes such as the Lakes District Land and Resource Management Plan, has been to implement the provincial government's Protected Areas Strategy (PAS) initiative. Prior to the approval of this plan, 456,662 hectares of the plan area was protected. That protection included North Tweedsmuir Park, Tweedsmuir Recreation Area and several small protected areas within the planning area.

The approval of this plan results in an additional 21,838 hectares approved for protection under the *Park Act* and 70,400 hectares approved for protection and eventual designation under the *Park Act*. In addition, the Tweedsmuir Recreation Area is approved for re-designation resulting in 7,250 hectares approved for designation under the Park Act, 15 hectares under the Environmental Land Use Act and 9,427 hectares for removal from protection and re-designation as the Mineral/Wildlife Resource Management Zone (Table 4). This results in a net gain of 92,238 hectares of protection. Other important conservation features, such as backcountry lakes and recreation sites, were identified for special resource management (see Section 4.4). See Table 5 for a summary of new protected areas.

All new protected areas include water bodies within their boundaries. This section identifies resource management objectives and strategies for new protected areas. A summary of each area, including protection values and hectarages can be found in Appendix 6, Table 1. Objectives and strategies which refer to 'provincial parks' or 'parks' address management direction for new protected areas once designated as provincial parks.

Land use within protected areas emphasizes resource conservation to the degree that resource extraction is excluded and other land uses may be limited or excluded. Land use and management within park areas is guided by park management plans, or interim management direction statements which provide temporary management guidance for new protected areas, pending development of comprehensive park management plans. The Province has developed guidelines regarding resource and recreation use in protected areas (Appendix 7), and the Lakes District LRMP has developed interim measures for mountain pine beetle management (Appendix 4) pending park designation.

The establishment of new protected areas plays a key role in the realization of the Plan's environmental conservation objectives, particularly through contributions towards ecosystem representation, general biodiversity maintenance and the protection of key habitat areas for rare and threatened species. New protected areas contribute significantly to recreational and cultural heritage objectives, as well as to long-term economic objectives. Chapter 5 contains further evaluative information on the contribution that the new protected areas make towards environmental and socio-economic objectives for the region. (Throughout this section, "Park" refers to "Protected Area.")

PROTECTED AREA OBJECTIVES	MANAGEMENT STRATEGIES
Park Planning	
1. To develop comprehensive park management plans, over time, for each approved protected area in order to ensure the maintenance of the conservation, recreation and cultural heritage values within the new protected areas.	**1.1 Park management plans will be developed for each approved protected area in accordance with the availability of budget resources and the priority resource values identified in the summary of new protected areas in Table 5.** **1.2 Park management plans will be developed with the benefit of extensive public and inter-agency participation. Among other things, the plans will define park-specific management objectives, acceptable uses, acceptable levels of use, zoning, and other strategies that will minimize conflicts and help ensure the**

PROTECTED AREA OBJECTIVES	**MANAGEMENT STRATEGIES**
	integrity of important park values. **1.3** Where appropriate, resource planning objectives and strategies on lands adjacent to, and within, protected areas will be complimentary (e.g., mountain pine beetle management, visual quality from viewpoints within a park; access management adjacent to sensitive features within a park). **1.4** Park management planning processes will include consultation with tourism industry representatives in order to examine potential commercial opportunities within provincial parks, subject to the prime goal to protect conservation, recreation and cultural heritage values within the parks. **1.5** Commercial opportunities will be assessed with regard to their compatibility with park management plans. Generally, physical commercial infrastructure (e.g., roads, lodgings, staging areas, etc.). will be directed outside of park boundaries in order to minimize park impacts. **1.6** Pending the development of comprehensive park management plans for each protected area, *Management Direction Statements* will be used to direct park management and operations.
Existing Tenures and In-Holdings	
2. To recognize the legal rights of existing tenure holders and landowners within newly established parks in the district, and to deal fairly with those interests.	**2.1** Existing mineral and timber tenures and other tenures/encumbrances associated with commodity extraction (e.g., gravel reserves) will be discontinued within new protected areas. The terms of discontinuance will be negotiated with owners of existing tenure interests, in accordance with provincial policy respecting resource rights compensation. Tenure discontinuance negotiations will also consider ongoing silviculture obligations (e.g., free-to-grow

PROTECTED AREA OBJECTIVES	MANAGEMENT STRATEGIES
	requirements), rehabilitation of harvested areas, and decommissioning and rehabilitation of roads in key locations. **2.2** Existing tenures within new parks for utility rights-of-way, communication sites, grazing, commercial backcountry recreation, guide-outfitting, trapping, water works and use, and other tenures not based in commodity extraction, will be permitted to continue, in accordance with the existing management conditions attached to those tenures. In the future, the management conditions attached to those tenures may be amended to comply with the requirements of BC Parks policy and park management plans developed for individual protected areas. **2.3** Consistent with tenure document provisions and current assignment/transfer procedures, holders of existing tenures of the type identified in strategy 2.2 above may assign/transfer their tenures to different parties. However, where existing tenures lapse or are voluntarily surrendered by a tenure holder, the province is under no obligation to re-issue the tenure rights. **2.4** Further to 2.2 and 2.3 above, trapping will continue as an authorized, grandparented use in protected areas. Extinguishment of tenure will occur on a voluntary basis only, through purchase by BC Parks at fair market value. **2.5** Further to 2.2 and 2.3 above, existing range tenures within the new Uncha Mountain - Red Hills protected area will continue to be administered and managed in accordance with the *Range Act*, as per the transitional provisions for new parks in the *Park Amendment Act, 1997*. **2.6** Alterations to conditions of tenure will be based on sound resource management principles with respect to the activity in

PROTECTED AREA OBJECTIVES	MANAGEMENT STRATEGIES
	question (e.g., sustainability of trapping, guiding, grazing activities) and/or avoidance of impacts to the resource values upon which the protected area was established (e.g., caribou, biodiversity, recreation etc.). Alterations will be made in consultation with the tenure holder. Where alterations to conditions of tenure act, in practical terms, to extinguish tenure, it is recommended that the tenure holder be fairly compensated. **2.7** Private land is excluded from parks according to Parks' policy. Existing owners of private land will therefore continue to exercise their rights. In addition, where private land is surrounded by new park and the only access is through park, existing rights to existing access to those properties will continue.
Natural Occurrences	
3. To protect adjacent resource values and private property, as appropriate, from natural disturbances in protected areas.	**3.1** Natural occurrences (e.g., fires, insects, and forest disease) within park boundaries will be managed to respect resource values both within and adjacent to park areas. This will be achieved by a district Memorandum of Understanding (MOU) to be developed between Parks and Ministry of Forests. It should consider joint determination of the point at which natural occurrences within parks become a risk to adjacent values, and the appropriate action to be taken to reduce said risk (using available management options). **3.2** In the interim prior to park designation, strategies for the management of mountain pine beetle within new protected areas will follow government direction for mountain pine beetle management in protected areas. The direction outlines specific management provisions for the Entiako. Specific mountain pine beetle management provisions shall be developed for other new protected areas on a case by case

PROTECTED AREA OBJECTIVES	MANAGEMENT STRATEGIES
	basis. **3.3** Mountain pine beetle management strategies will be developed for each protected area, on a case by case basis, as a component of park management plans. Mountain pine beetle management within park areas will consider those recommendations outlined in the *Interim Mountain Pine Beetle Management Strategy for Proposed Protected Areas* (Appendix 4), consistent with current legislation. **3.4** Where land management includes prescribed burning, fire management plans will be developed for areas within new parks to protect public safety, facilities and resource values on adjacent lands.
Park Management	
4. To maintain ecosystem representation and integrity, and ensure protection of key resource values and natural features.	**4.1** Park management emphasis will be placed on maintaining the ecosystems, resource values and natural features for which protected areas were established. Tables 4 and 5 below outline priority protection values. **4.2** Management interventions will not significantly alter natural ecological, hydrological and geomorphic processes except for express management purposes as defined by a protected area management plan. **4.3** Where existing grazing tenures occur, sensitive plant communities (i.e., steep south facing slopes) will be maintained in conjunction with MOF through application of range management guidelines. **4.4** Sound park management relies on good information. BC Parks will work together with other agencies to collect resource inventory for new park areas. **4.5** Vegetation management will be undertaken, where appropriate, where

PROTECTED AREA OBJECTIVES	MANAGEMENT STRATEGIES
	previously open forests and grasslands have become ingrown as a result of fire suppression. Fire will be the primary means of restoring natural grasslands for conservation purposes only. **4.6** The contribution of new protected areas to Landscape Unit objectives will vary over time with both natural and management processes. The Old Growth within these areas will, over time, contribute to LU biodiversity objectives.
5. To ensure protection of key species and their habitats.	**5.1** BC Parks will work with other agencies to ensure connectivity of wildlife habitat between parks and surrounding areas. **5.2** Opportunities to establish benchmarks for scientific study and management of rare, endangered and at risk species will be investigated. **5.3** Rare, endangered and at risk species, and their habitats, will be protected. **5.4** Habitat, cover and site specific features for non-key fish and wildlife species will be considered in management processes.
6. To provide/maintain primitive or backcountry recreation opportunities.	**6.1** While BC Parks will continue to manage parks to provide a wide range of recreational experiences, protected areas will provide the primary opportunities for primitive and backcountry recreation. Where appropriate, existing access and trails within protected areas may be closed or decommissioned to support primitive recreational experiences. Similarly recreational access to some areas may be limited to maintain the quality of the recreational experience. **6.2** Levels of recreational use and associated impacts will be monitored and management applied, where necessary, to maintain the backcountry qualities of an

PROTECTED AREA OBJECTIVES	MANAGEMENT STRATEGIES
	area. **6.3** Promote good visual design of logging and appropriate access management in areas adjacent to parks.
7. To plan and manage parks in a manner which reflects the cultural heritage of those areas.	**7.1** Local First Nations will be consulted to identify traditional use areas within parks. **7.2** Options to work in cooperation with First Nations in the planning and management of parks will be pursued. **7.3** Non-aboriginal history will be considered in park management plans.
Entiako Protected Area	
8. Ensure that subsequent land and resource management and planning activities reflect LRMP direction for the Entiako by identifying in sufficient detail, management concerns unique to the Entiako Protected Area.	**8.1** LRMP management intent for the Entiako Protected Area includes the dual objectives of preserving the long-term ecological viability of the area for caribou, while maintaining an acceptable level of mountain pine beetle (MPB) infestation risk to adjacent timber resource values. Preservation of caribou habitat remains the resource management priority, and acceptable strategies for pursuit of MPB objectives in this management may include pheromone baiting, large scale controlled burning, small scale controlled patch burns and single tree disposal. **8.2** The Entiako is a protected area established under the Environment and Land Use Act, and is intended for designation as Class A Park once an ecosystem based management plan has been completed which meets the dual objective under 8.1 above.

Table 4 Re-designation of Tweedsmuir Recreation Area

	Prior to LRMP	Following LRMP	
	Ha. Contributing to Class B Protection	Ha contributing to protection	Ha. re-allocated
Tweedsmuir Recreation Area	16,692		
Area confirmed as Tweedsmuir Park Addition		7,250	
Area re-designated to new Mineral/Wildlife Resource Management Zone			9,427
Area under Environment and Land Use Act for camp and road purposes		15	
Totals	16,692	7,265	9,427

Table 5 New Protected Areas Summary

Name Recommended for Protection	Priority Protection Values	Approximate Area (ha)	Area* as Percent of...			Comments
			Plan	TSA	THL	
Burns Lake South (UREP 8555 - DL2454 R5CD)	Recreation Values	62	0.004	0.006	0.009	For campground development
Babine Lake Sites	Recreation and Cultural Heritage Values	80	0.005	0.008	0.01	Consists of 5 small sites along the shores of Babine Lake (see figure 11)
Entiako	Ecosection Representation, Caribou Winter Range	70,400	4.9%	6.9%	6.8%	Protection involves resolving mountain pine beetle issues
Sutherland	Ecosection Representation, Grizzly, Ungulate & Fisheries Habitat, Special Habitats	12,900	0.9%	1.3%	0.8%	Includes Babine ERP#378 and Sutherland river sites which are recognized for their rare species and being biologically exceptional. ERP #378 is recommended for designation as an Ecological Reserve
Uncha Mountain / Red Hills	Ecosection Representation, Special Habitats, Recreation & Scenic Areas	8,800	0.6%	0.9%	0.5%	Includes a Juniper Scrub site, Red Hills site and Uncha Mountain all of which are recognized for being biologically exceptional and of high recreation value. Uncha Mountain and Red Hills are also noted as remnant Ecosystems.
	District Total	92,242	6.4%	9.1%	8.1%	

* ***All percentages calculated based on areas net of water:***

- *Planning Area (net of water): 1,424,000ha*
- *Timber Supply Area (net of water): 1,007,000ha*
- *Timber Harvesting Landbase (net of water): 663,000ha*

NOTE: % of THL calculation is based upon number of hectares of THL falling within a new protected area, divided by total area of THL

Figures

Figure 2 Biogeoclimatic Ecosections

Figure 3 Visual Inventory

Figure 4 Biological Ecosystem Network

Figure 5 Resource Management Zones

Figure 6 Intensive Timber Management Areas Sub-Zone

Figure 7 Back Country Lakes Sub-Zone

Figure 8 Recreation Emphasis Sub-Zone

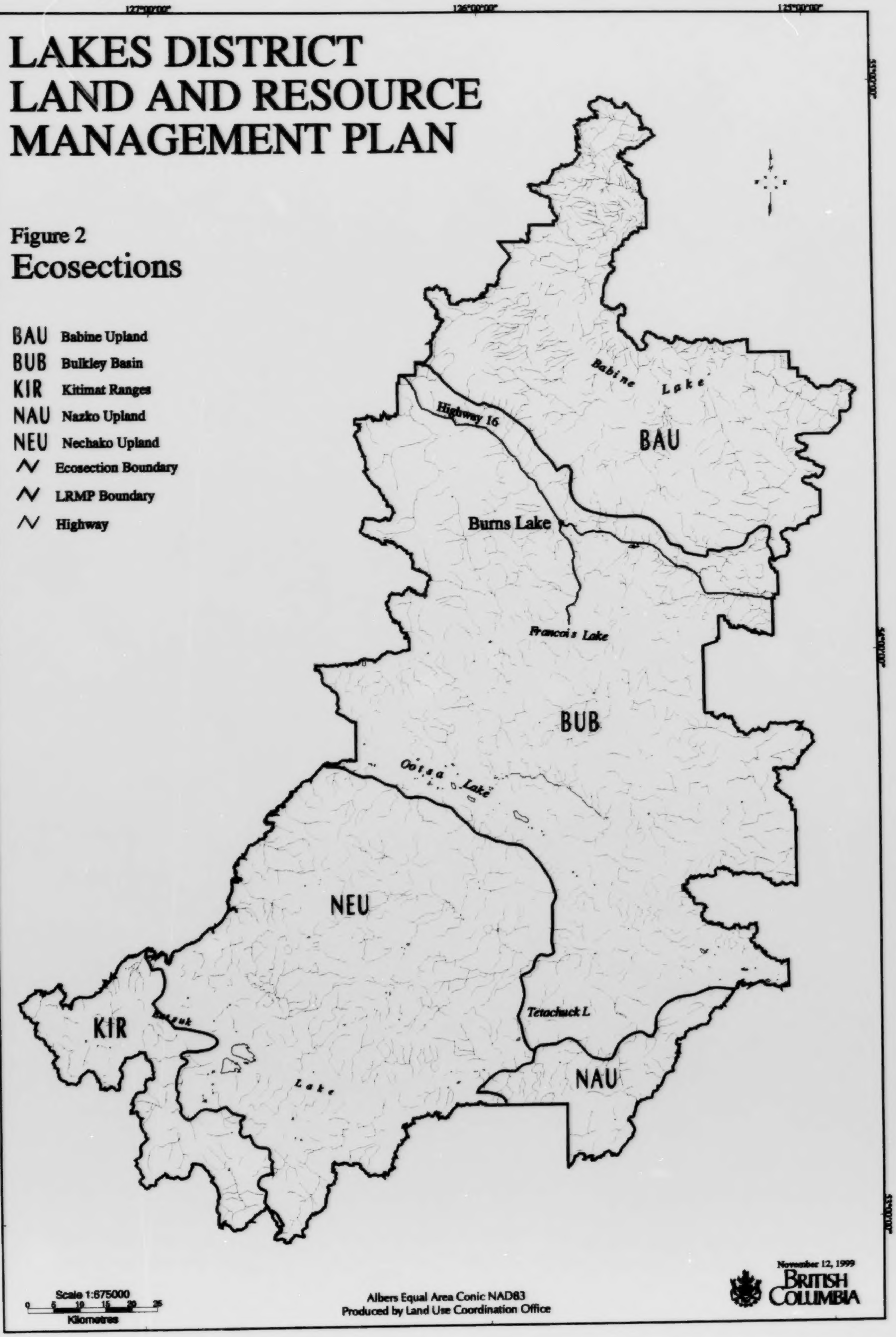
Figure 9 Caribou Migration corridor sub-zone

Figure 10 Ungulate Winter Habitat Sub-Zone

Figure 11 Babine Lake Ecological Reserve Proposal and Babine Lake Boating Sites Protected Area

LAKES DISTRICT LAND AND RESOURCE MANAGEMENT PLAN

Figure 2
Ecosections


BAU Babine Upland
BUB Bulkley Basin
KIR Kitimat Ranges
NAU Nazko Upland
NEU Nechako Upland
Ecosection Boundary
LRMP Boundary
Highway
127°00'00"
126°00'00"
125°00'00"
55°00'00"
54°00'00"
53°00'00"
Babine Lake
Highway 16
BAU
Burns Lake
Francois Lake
BUB
Ootsa Lake
NEU
KIR
Lake
Tetachuck L
NAU
Scale 1:675000
0 5 10 15 20 25
Kilometres

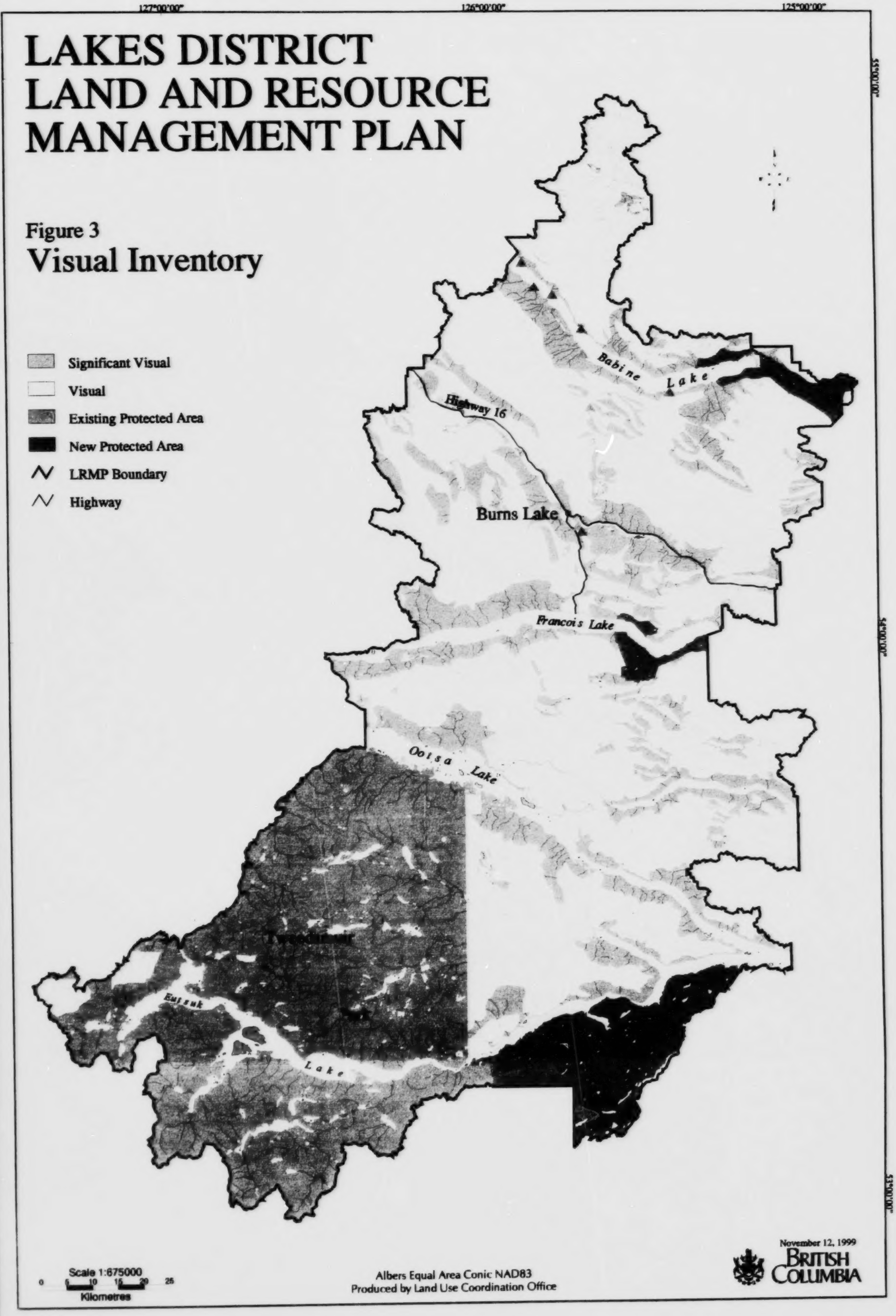
Albers Equal Area Conic NAD83
Produced by Land Use Coordination Office

November 12, 1999
BRITISH COLUMBIA

LAKES DISTRICT LAND AND RESOURCE MANAGEMENT PLAN

Figure 3

Visual Inventory


127°00'00"
126°00'00"
125°00'00"
55°00'00"
54°00'00"
53°00'00"
Significant Visual
Visual
Existing Protected Area
New Protected Area
LRMP Boundary
Highway
Babine Lake
Highway 16
Burns Lake
Francois Lake
Ootsa Lake
Tweedsmuir
Eutsuk Lake
Scale 1:675000
0 5 10 15 20 25
Kilometres

Albers Equal Area Conic NAD83
Produced by Land Use Coordination Office

November 12, 1999
BRITISH COLUMBIA

LAKES DISTRICT LAND AND RESOURCE MANAGEMENT PLAN

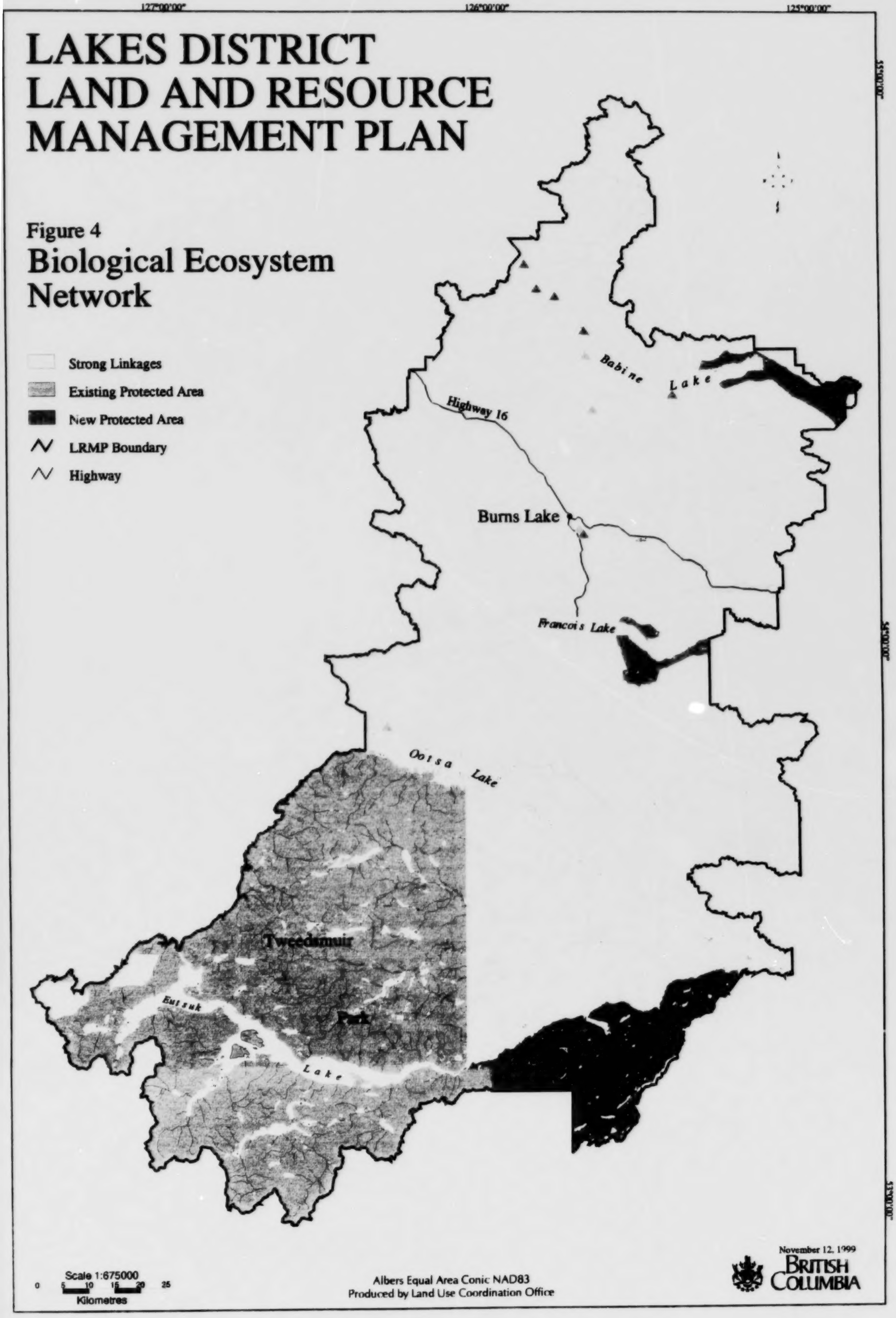


Figure 4
Biological Ecosystem Network

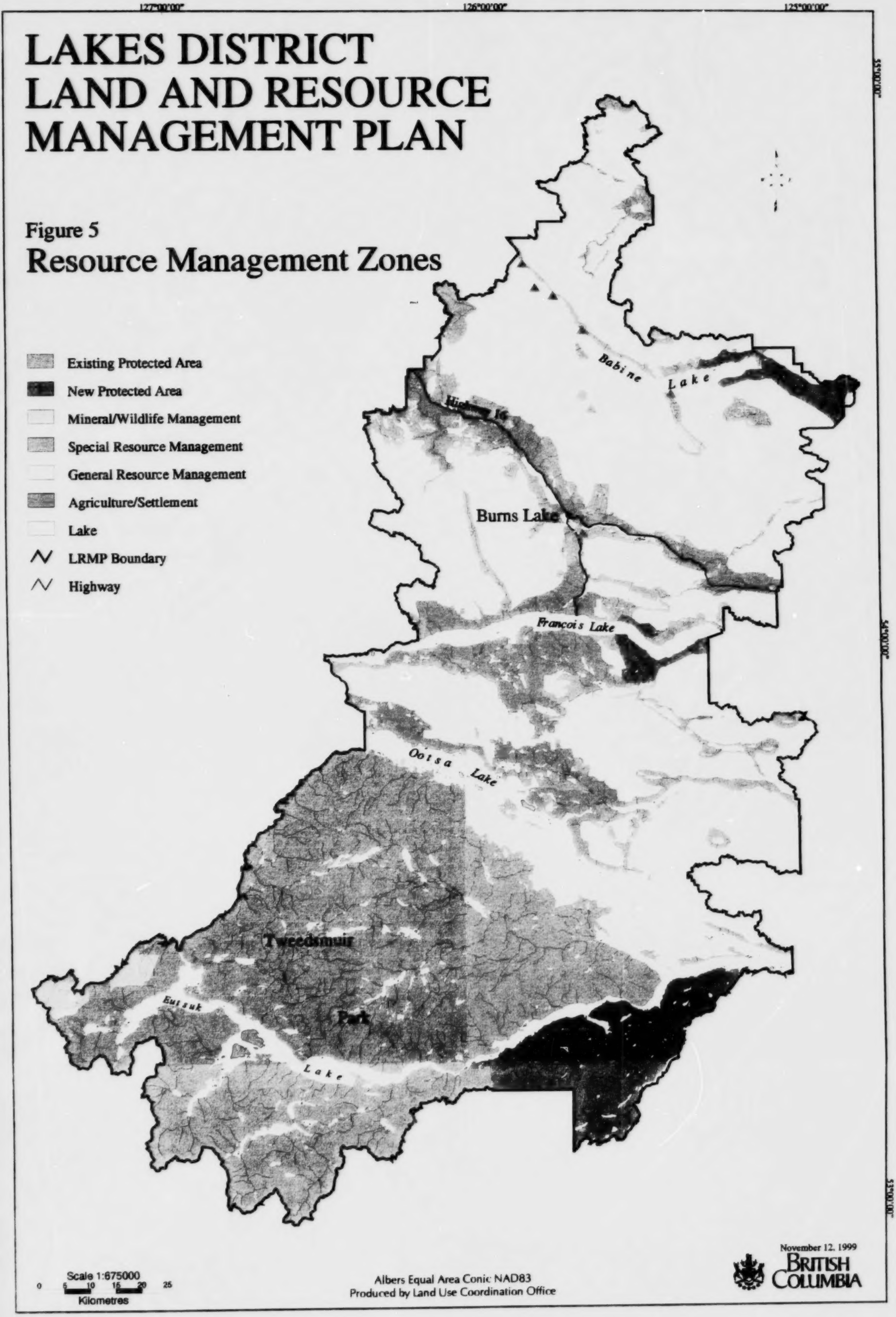
127°00'00"
126°00'00"
125°00'00"
55°00'00"
54°00'00"
53°00'00"
Strong Linkages
Existing Protected Area
New Protected Area
LRMP Boundary
Highway
Babine Lake
Highway 16
Burns Lake
Francois Lake
Ootsa Lake
Tweedsmuir Park
Eutsuk Lake
Scale 1:675000
0 5 10 15 20 25
Kilometres

Albers Equal Area Conic NAD83
Produced by Land Use Coordination Office

November 12, 1999
BRITISH COLUMBIA

LAKES DISTRICT LAND AND RESOURCE MANAGEMENT PLAN

Figure 5
Resource Management Zones


127°00'00"
126°00'00"
125°00'00"
55°00'00"
54°00'00"
53°00'00"
Existing Protected Area
New Protected Area
Mineral/Wildlife Management
Special Resource Management
General Resource Management
Agriculture/Settlement
Lake
LRMP Boundary
Highway
Babine Lake
Highway 16
Burns Lake
François Lake
Ootsa Lake
Tweedsmuir Park
Eutsuk Lake
Scale 1:675000
0 5 10 15 20 25
Kilometres

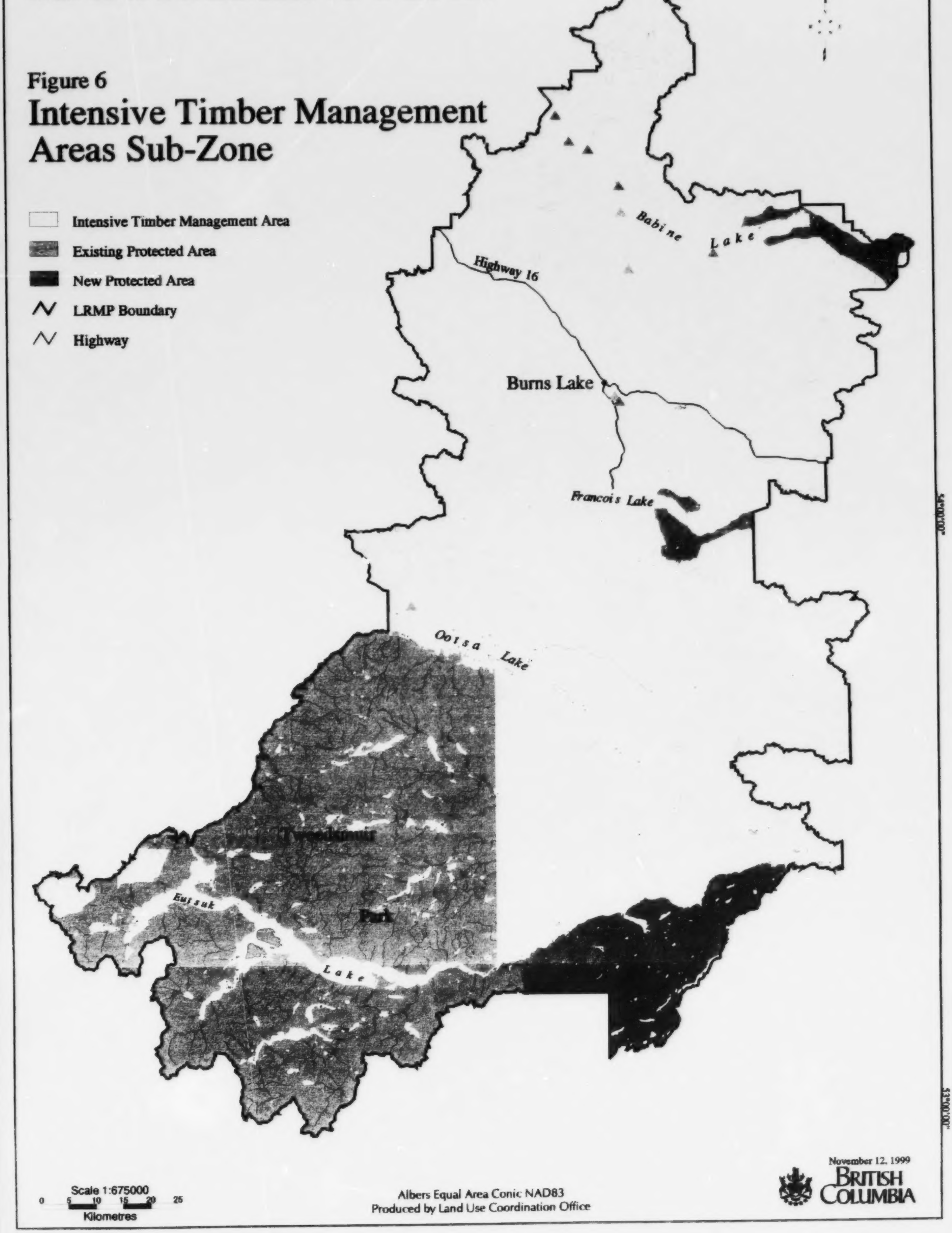
Albers Equal Area Conic NAD83
Produced by Land Use Coordination Office

November 12, 1999
BRITISH COLUMBIA

LAKES DISTRICT LAND AND RESOURCE MANAGEMENT PLAN

Figure 6

Intensive Timber Management Areas Sub-Zone


Intensive Timber Management Area
Existing Protected Area
New Protected Area
LRMP Boundary
Highway
127°00'00"
126°00'00"
125°00'00"
55°00'00"
54°00'00"
53°00'00"
Babine Lake
Highway 16
Burns Lake
Francois Lake
Ootsa Lake
Tweedsmuir
Park
Eutsuk Lake
Scale 1:675000
0 5 10 15 20 25
Kilometres

Albers Equal Area Conic NAD83
Produced by Land Use Coordination Office

November 12, 1999
BRITISH COLUMBIA

LAKES DISTRICT LAND AND RESOURCE MANAGEMENT PLAN

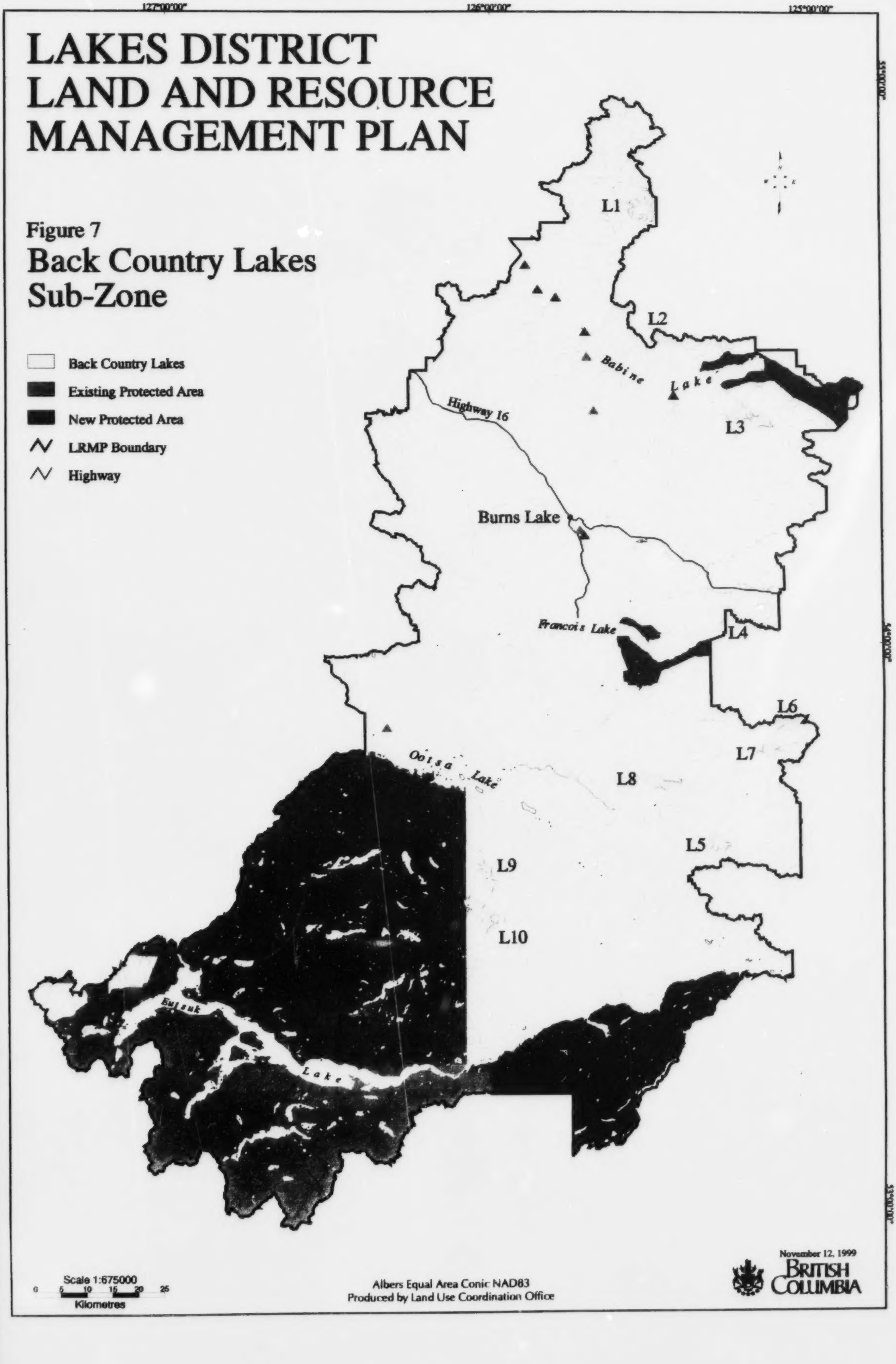


Figure 7
Back Country Lakes Sub-Zone

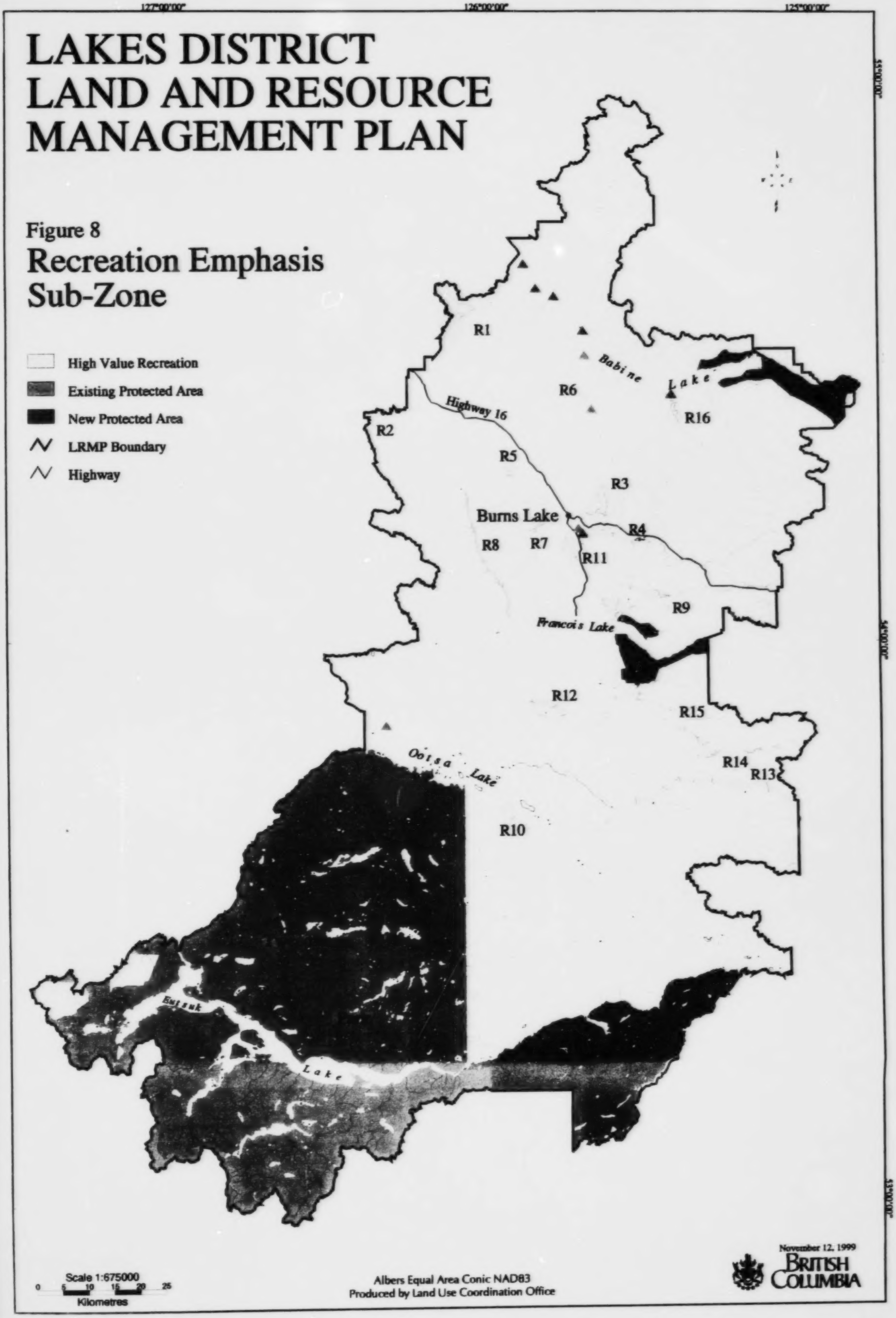
127°00'00"
126°00'00"
125°00'00"
55°00'00"
54°00'00"
53°00'00"
Back Country Lakes
Existing Protected Area
New Protected Area
LRMP Boundary
Highway
L1
L2
Babine Lake
L3
Highway 16
Burns Lake
Francois Lake
L4
L6
L7
Ootsa Lake
L8
L5
L9
L10
Eutsuk Lake
Scale 1:675000
0 5 10 15 20 25
Kilometres

Albers Equal Area Conic NAD83
Produced by Land Use Coordination Office

November 12, 1999
BRITISH COLUMBIA

LAKES DISTRICT LAND AND RESOURCE MANAGEMENT PLAN

Figure 8
Recreation Emphasis Sub-Zone



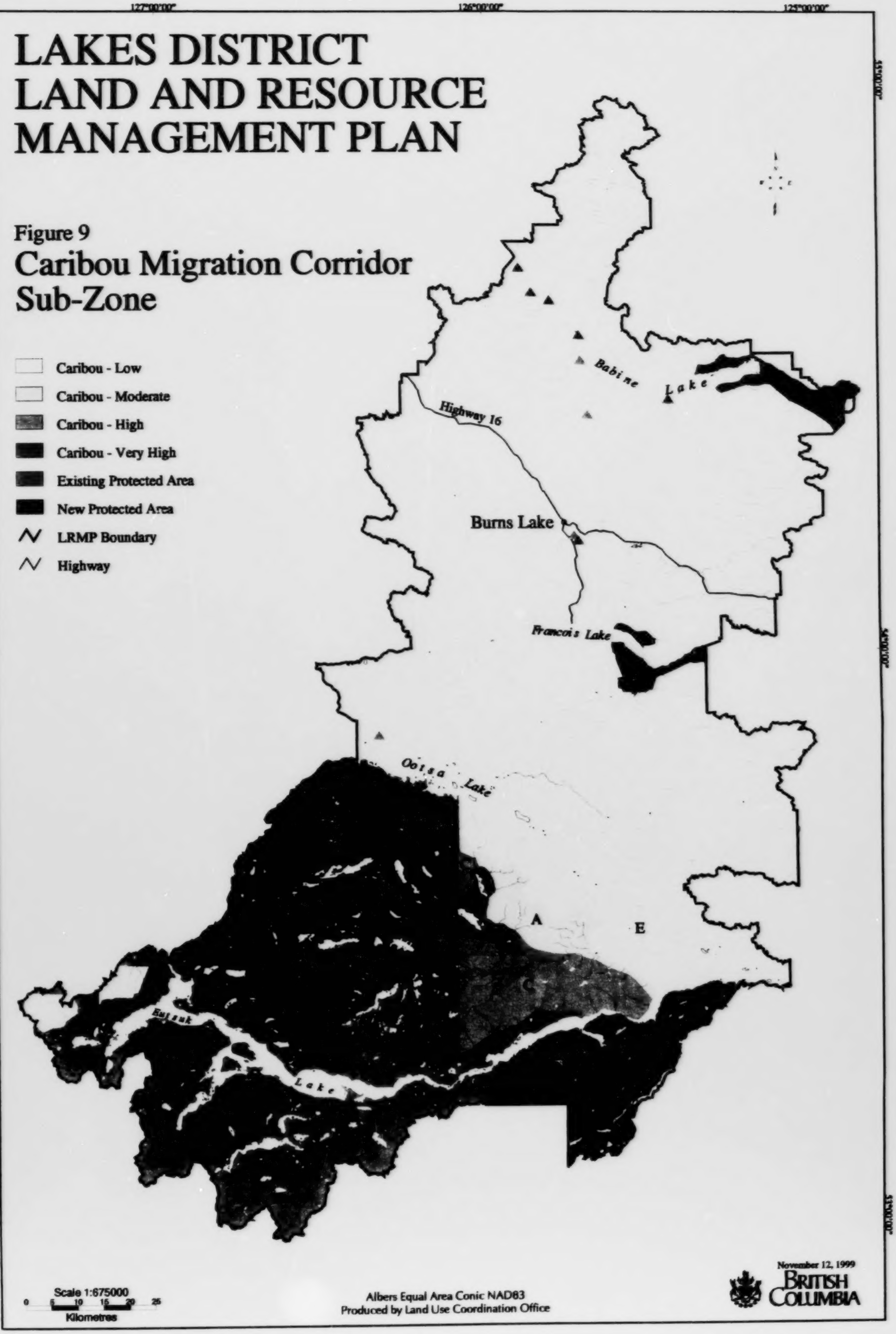
127°00'00"
126°00'00"
125°00'00"
55°00'00"
54°00'00"
53°00'00"
High Value Recreation
Existing Protected Area
New Protected Area
LRMP Boundary
Highway
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
Babine Lake
Highway 16
Burns Lake
Francois Lake
Ootsa Lake
Eutsuk Lake
Scale 1:675000
0 5 10 15 20 25
Kilometres

Albers Equal Area Conic NAD83
Produced by Land Use Coordination Office

November 12, 1999
BRITISH COLUMBIA

LAKES DISTRICT LAND AND RESOURCE MANAGEMENT PLAN

Figure 9
Caribou Migration Corridor Sub-Zone

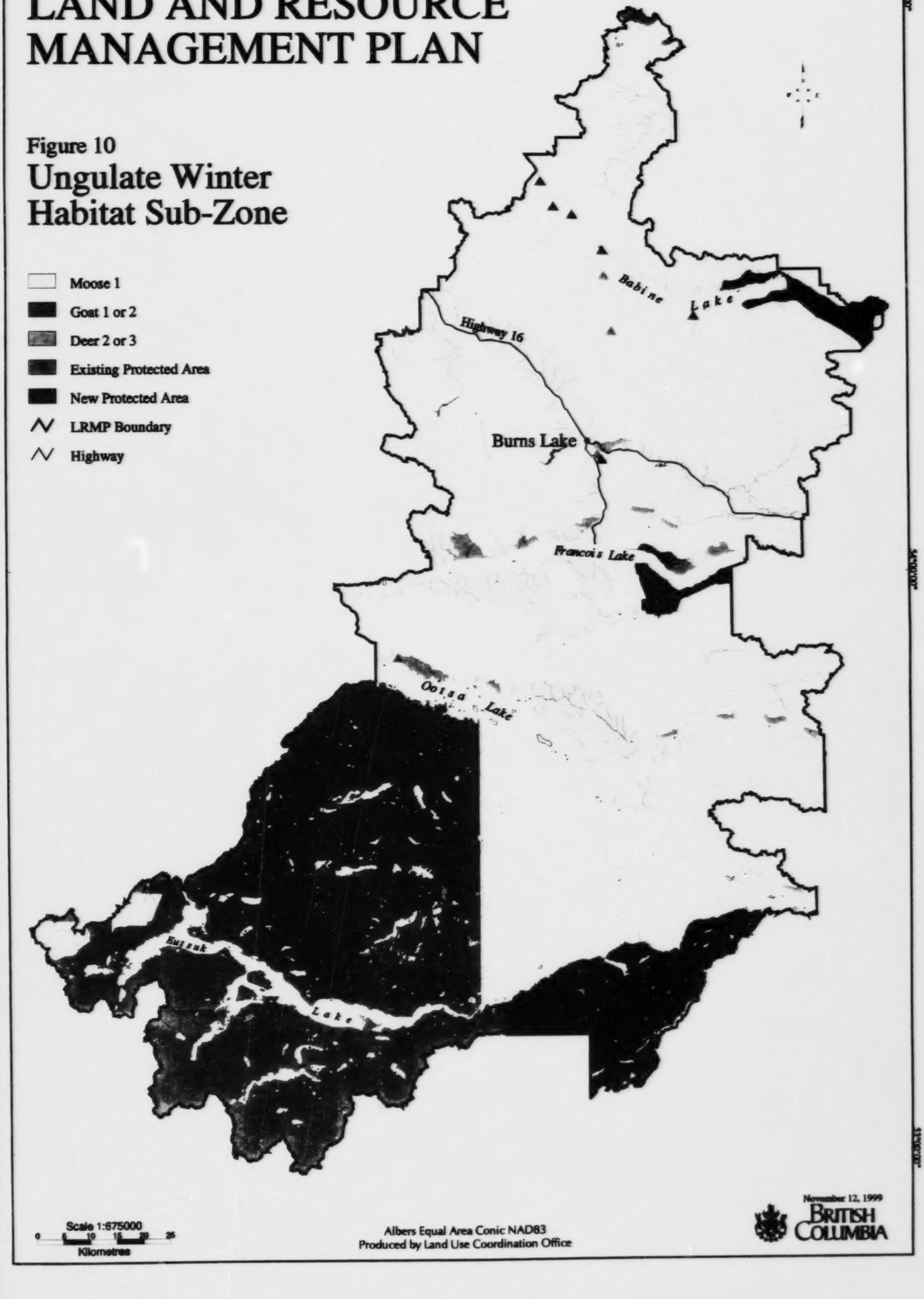

Caribou - Low
Caribou - Moderate
Caribou - High
Caribou - Very High
Existing Protected Area
New Protected Area
LRMP Boundary
Highway
127°00'00"
126°00'00"
125°00'00"
55°00'00"
54°00'00"
53°00'00"
Babine Lake
Highway 16
Burns Lake
Francois Lake
Ootsa Lake
A
E
Eutsuk Lake
Scale 1:675000
0 5 10 15 20 25
Kilometres

Albers Equal Area Conic NAD83
Produced by Land Use Coordination Office

November 12, 1999
BRITISH COLUMBIA

LAKES DISTRICT LAND AND RESOURCE MANAGEMENT PLAN

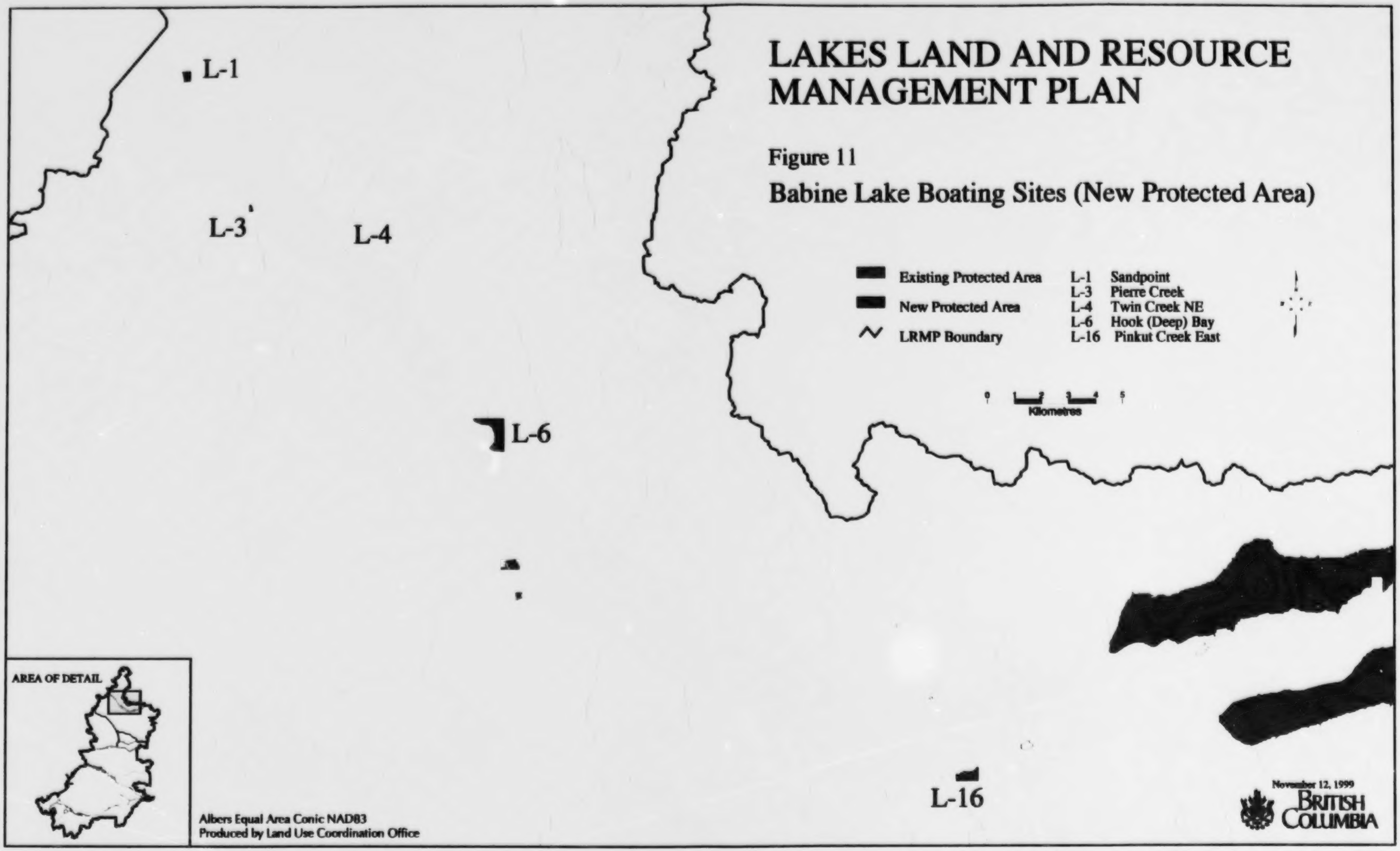
Figure 10
Ungulate Winter Habitat Sub-Zone



127°00'00"
126°00'00"
125°00'00"
55°00'00"
54°00'00"
53°00'00"
☐ Moose 1
■ Goat 1 or 2
▨ Deer 2 or 3
■ Existing Protected Area
■ New Protected Area
LRMP Boundary
Highway
Babine Lake
Highway 16
Burns Lake
Francois Lake
Ootsa Lake
Eutsuk Lake
Scale 1:675000
0 5 10 15 20 25
Kilometres

Albers Equal Area Conic NAD83
Produced by Land Use Coordination Office

November 12, 1999
BRITISH COLUMBIA



LAKES LAND AND RESOURCE MANAGEMENT PLAN

Figure 11

Babine Lake Boating Sites (New Protected Area)

L-1
L-3
L-4
L-6
L-16
Existing Protected Area
New Protected Area
LRMP Boundary
L-1 Sandpoint
L-3 Pierre Creek
L-4 Twin Creek NE
L-6 Hook (Deep) Bay
L-16 Pinkut Creek East
0
2
3
4
5
Kilometres
AREA OF DETAIL

Albers Equal Area Conic NAD83
Produced by Land Use Coordination Office

November 12, 1999

BRITISH COLUMBIA

Notes

CHAPTER 5

Socio-Economic/Environmental Assessment

5.1 Introduction

This chapter summarizes the socio-economic and environmental implications of the draft consensus land use plan generated by the Lakes District LRMP Resource Council (the "Draft Plan – June 1997") as compared to the land and resource management regime that would otherwise be in effect in the planning area (the "Base Case").[2] Independent economic and wildlife biology consultants undertook the work with input from the Economics Branch of the Ministry of Employment and Investment (MEI). **This information is represents an assessment and interpretation of the available data by an independent consultant and does not necessarily represent government position.**

The Lakes LRMP (same boundary as the Lakes Forest District) comprises some 1,424,000 ha. (net of water) including north Tweedsmuir Park / Recreation Area which accounts for 417,000 ha. (net of water) or 29.2% of the planning area. As the mandate of the Resource Council did not include the modification of the boundaries and/or management of existing park areas, and inventory data for Tweedsmuir is lacking, virtually all of the assessment statistics are presented as a percentage of the TSA (net of water) rather than for the entire planning area. Socio-economic/environmental assessment summary tables can be found in Appendix 11.

This section briefly outlines the sources of information and assumptions underlying the assessment. Sections 5.2 and 5.3 review potential impacts on various resource values which are attributable to the Draft Plan based on socio-economic and environmental resource analysis. The concluding section highlights areas of concern, points out factors which tend to mitigate impacts, and gives a sense of the overall effect of the Draft Plan (as compared to the Base Case) in both socio-economic and environmental terms. It is important to read this summary in its entirety in order that specific impacts can be considered in the context of the Draft Plan as a whole.

The assessment utilizes Geographic Information System (GIS) area analysis as supplied by the Ministry of Forests (MoF) and resource analysis/information for timber, mining, etc. values as provided by government agencies on the Lakes LRMP Inter-agency Planning Team (IPT). The analysis is comprised of two levels: (1) an assessment of the (evolving and forward-looking) "Base Case"[3] or management regime within the area in the absence of a land use plan, and (2) an analysis of the likely effects (over and above the Base Case) of the Draft Plan.

---

[2] Full discussion is provided in *Lakes District LRMP: Preliminary Socio-Economic & Environmental Analysis of Draft Land Use Plan ("Scenario O")*, G. Holman, et al, June 20, 1997.

The Base Case incorporates evolving provincial initiatives and anticipated trends - such as the Timber Supply Review (TSR), Forest Practices Code (FPC), and other "current management" practices such as caribou winter range management constraints in the Entiako and the results of MoF "paired-plot" forest productivity research - that would otherwise be in effect in the planning area. Comparing the Draft Plan to a regime which does not incorporate these initiatives and trends would exaggerate impacts. By accounting for these factors, only impacts attributable to the Draft Plan (i.e., new protected areas and LRMP management strategies) are assessed.

The Draft Plan divides the land base into 5 broad zones: Protected Areas (PA), Special Resource Management Zones (SMZ), General Resource Management Zones (GMZ), Intensive Timber Management Zones (ITM), and an Agriculture/Settlement Zone (ASZ). To provide an appropriate "benchmark" for comparison, the IPT assigned zone designations (corresponding to those developed in the Draft Plan) to the Base Case, based upon the level of management most likely to prevail in the absence of the LRMP. (In the Base Case, for example, 40.7% of the planning area is considered to be "Special Management" and is comprised of retention and partial retention VQOs, riparian complexes, the Entiako herd caribou migration corridor, caribou winter range in the Entiako area, and the Sutherland Valley).

Table 6 and 7 summarize the distribution of these land use designations for the Base Case and Draft Plan. The implications of changes in distribution between the Base Case and the Draft Plan, as they affect various resource values in the District, are the subject of the remainder of this report. Table 6 contains values for the TSA only. Table 7 contains values for the planning area including Tweedsmuir Park.

---

[3] Discussion of the Base Case for all sectors based on the *Draft Socio-Economic Base Case for the Lakes Land and Resource Management Planning Process*, G. Holman, et al, December, 1996.

Table 6 Land Use Zones as % of TSA (Net of Water)

	Protected Areas	Special Resource Management	General (Integrated) Resource Management	Intensive Timber Management	Agriculture/ Settlement
Base Case	-	40.7%	52.2%	-	7.1%
Draft Scenario	9.2%[3]	32.3%[2]	27.3%	19.7%	11.5%

1. TSA (net of water) estimated at 1,007,000 ha and excludes Tweedsmuir Park / Recreation Area.
2. Note: Special Resource Management, for purposes of this assessment, includes retention and partial retention "Visual Quality Objectives" and ecosystem network "Hard Links" to enable more meaningful technical comparison with the Base Case. Strategically, however, the Draft Plan treats these values as integrated resource management concerns.
3. It should be noted that 9% in new protected areas does not imply an immediate 9% AAC reduction - see Forestry discussion below.

Table 7 Land Use Zones as % of Planning Area (Net of Water)

	Protected Areas	Special Resource Management	General (Integrated) Resource Management	Timber Management	Ag/ Settlement
Base Case	29.2%	28.8%	36.9%	-	5.0%
Draft Scenario	35.8%	22.8%	19.3%	13.9%	8.1%

5.2 Socio-Economic Resource Analysis

Forestry

The Ministry of Forests' (MoF) analysis of the Base Case indicates that the current Lakes Annual Allowable Cut of 1.5 million m3/yr could be sustained for 165 years, and then increased to a long run harvest level of 1.8 million m3/yr. While harvest levels in the Base Case[4] are expected to remain at current levels for many years, forestry employment can be affected by a variety of other factors, e.g. rationalization, increasing competition for MoF Small Business Sales, more labour or machine - intensive harvesting, etc. It should also be noted that in the absence of the Forest Practices Code and the Base Case management strategy for Caribou, MoF estimates that the Timber Harvesting Land Base[5] could support an immediate harvest increase to 1.77 million m3/yr for 170 years, based on results of the paired-plot analysis for managed pine stands undertaken for the TSR.[6] This implies a foregone opportunity (not to be confused with a loss in existing harvest) to begin harvesting in the short term an additional 250,000-300,000 m3/yr as a result of these Base Case initiatives, which should not be attributed to the LRMP.

---

[4] The "base case" timber supply forecast for the LRMP takes into account the Timber Supply Review, the Forest Practices Code, the "paired-plot" analysis, and special management in the Entiako caribou winter range. See *Lakes LRMP Timber Supply Impacts*, G. Hoehne, Ministry of Forests, April 14, 1997.

The net effect of new Protected Areas (PAs) and proposed LRMP strategies will potentially result in an eventual annual reduction in the present harvest of about 100,000 m3/yr, equal to 6.6% of the current 1.5 million m3/yr AAC. *However, the MoF assessment indicates that these impacts can be deferred for up to 30-40 years*, depending on future AAC decisions by the Chief Forester. Harvesting in the Draft Plan would continue at the lower level of about 1.4 million m3/yr until year 165, and then increase to a long term level of 1.7 million m3/yr. Long term projections don't account for potential further increases to timber supply due to productivity gains resulting from enhanced forestry practices in the Intensive Timber Management zone.

Assuming a linear linkage between the annual timber harvest and direct/spin-off forestry jobs, the Scenario could place about 45-60 direct forestry jobs and 10-20 indirect and induced jobs at risk in the Lakes District after this 30-40 year period, roughly split half and half between the Burns Lake community and the remainder of the District. The total potential employment impact represents about 2.4% - 3.4% of 1991 employment (as per the 1991 Census count) in the District.

Since harvest reductions are likely to be pro-rated among license holders, it is unlikely that either of the two larger sawmills in the District would close due to the Draft Plan.[7] This is only likely to change if large quantities of Lakes SBFEP wood are bid away from the Lakes area, a possibility which is equally likely under the Base Case management scenario[8].

---

[5] Note that the LRMP Resource Council agreed that the MoF "net-down" process used to arrive at the Timber Harvesting Land Base for the 1995 Lakes TSA Timber Supply Review was appropriate and would be used for the LRMP timber supply impact assessment.

[6] Timber Supply Review: *Lakes TSA Timber Supply Analysis*, Ministry of Forests, June 1995, p. 38.

[7] At least 30% of the AAC leaves the TSA for processing, implying that processors in the TSA would have to share a reduction in harvest of at most 70,000 m3/yr. (depending on destination of SBFEP purchases) or no more than 7% of the total capacity of Babine Forest Products and Decker combined. Given this relatively small proportion, it is difficult to see how large employment impacts would result.

[8] A local forest industry representative points out that Babine Forest Products only has 55% of its consumption (estimated total consumption at 770,000 m3/yr.) provided

Tourism and Recreation

The three new Protected Areas (PAs) in the Draft Plan, with an area of about 92,000 hectares, would preserve some opportunities for wilderness (i.e., non-roaded) recreation in the District. For example, about 22% of "backcountry potential areas" would be in new PAs. These PAs, particularly those with some road access, over time would likely attract and encourage longer stays in the region by tourists, and would protect opportunities for growth in outdoor recreation (e.g., camping) by residents[9] and commercial backcountry tourism.

The Draft Plan would also place 97% of the area around 10 back-country lakes and 83% of high value recreation areas in SMZs or new protected areas, as compared to 72% and 53% respectively, in Base Case SMZs. Development of roads for timber harvesting (except for forest health purposes) around these backcountry lakes would be restricted. Stricter controls on access in the Scenario will reduce pressures on backcountry lake fisheries and big game species upon which guide-outfitters and some fishing guide / lodge operations depend to attract their clients.

In the longer term, primitive recreation opportunities will be available only in Tweedsmuir Park and the new proposed Protected Areas, and semi-primitive opportunities will be significantly diminished.[10] This is because roaded development is likely to eventually occur throughout the 91% of the TSA (net of water, a full 63% of the pre-LRMP gross land base of the TSA is considered by MoF to be "long term timber harvesting land base") that is not protected.

While it is expected that the new PAs and SMZs designed to preserve key recreation values in the District will generate additional employment and investment in wilderness tourism, compared to the Base Case, such impacts will take place gradually, over time. For example, if the Scenario caused annual growth in wilderness-related tourism employment to increase to 1.5% annually from its present estimated

---

from licensed sources, and is therefore vulnerable to changes in the price/availability of SBFEP volumes.

[9] As noted in the *Draft Lakes LRMP Socio-Economic Base Case*, op. cit., recreation activity by residents of the District, while obviously beneficial, is considered to represent a diversion of spending within the region rather than new income to the region.

[10] See Prince Rupert Forest Region and Lakes Forest District, *Lakes Timber Supply Area Plan 1987-1991*, March 1987, p. 8. This document states that hectarage in the "primitive" category would disappear and that only 132,000 hectares in the "semi-primitive" category would remain after 20 years. Note "primitive" is defined by MoF to be "greater than 8 km from a 4-wheel drive road and exceeding 5000 ha., and "semi-primitive" is defined as "greater than 1 km from a 4-wheel drive road and exceeding 500 ha."

level of about 1% per year, about 18 new jobs could be created over the next 30 years.[11]

Mining and Energy

Although areas of relatively high mineral potential occur within the planning area, with active exploration in several areas, there are currently no operating mines in the District. The Lakes District's most promising developed prospect,[12] Lindquist / Deerhorn, is located in the 17,000 ha Tweedsmuir Recreation Area, in which mining exploration (with constraints) is currently allowed, but logging is not. The other developed prospect is the Mac molybdenum-copper deposit at the northern tip of the District, with estimated reserves of roughly 100 million tonnes.

No existing mines would be precluded by the Draft Plan. The new PAs in the Scenario would preclude about 0.8% of areas with current metallic exploration activity, about 14% of significant metallic potential areas, 5% of significant industrial mineral potential areas, and 9% of oil/gas potential areas.[13] Another 38% of current metallic mineral activity, and 31%-36% of (significant) industrial / metallic and (overall) energy potential would be included in SMZs. Exploration and development is still an allowable use in SMZs, but the increased costs of new constraints may reduce investor confidence; however, it may also be the case that exploration may be diverted to those parts of the land base that are contained in the less constraining zones.

Perhaps the most significant implication of the Scenario for the mining sector is that the Mac molybdenum-copper property falls within a new SMZ for goat habitat. This property, if developed, could potentially support about 150 direct jobs annually, according to the Ministry of Energy and Mines. There are concerns that the management strategies for this area, including possible access restrictions, could impose additional costs or even preclude development of this deposit. However, its viability is uncertain at this time. Based on historical experience in BC, the likelihood that developed metallic prospects such as the Mac and Lindquist / Deerhorn become operating mines is about 1 in 25.[14]

---

[11] Assumes that overall tourism employment in 1996 is 195 (up from 186 in 1991 as per *Draft Base Case*, p. 9) and 16% (i.e., 32 jobs) are within the nature-based tourism sub-sector (see *Visitor '89, North by Northwest Tourism Region*, BC Ministry of Tourism, p.11). Current 1% annual growth rate for overall tourism sector in District based on 11% growth in Accommodation/Food labour force during 1981-91 period, according to *Draft Base Case*, p. 5.

[12] A developed prospect is a mineral occurrence with defined ore reserves, and therefore represents the "best chance" for mine development, although probability and timing are always uncertain.

[13] These areas are defined by the Energy and Minerals Division of MEI. MEI's definition of significant metallic and industrial potential includes the top 5 of 10 mineral classes. For example, this definition of significant metallic potential covers 49% of the TSA (net of water), according to the MoF GIS work.

Therefore, while new PAs in the Draft Plan preclude some mineral and energy potential, activity in these sectors will also be driven by market and other factors (e.g., taxes and other costs) not related to the LRMP. Finally, it should be noted that the LRMP did not come to consensus on the future status of mining in the Tweedsmuir Recreation Area, and that this decision now falls to government (see Section 4.6).[15]

Agriculture

About 13% of the Agricultural Land Reserve (ALR), 27% of existing range tenures and 37% of range potential are in SMZs in the Base Case, which could place some management constraints on potential range use. About 56% of the ALR is in the Settlement Zone in the Base Case.

The Scenario would place none of the ALR, only 5% of existing range tenures and about 8% of range potential in new protected areas. Existing grazing tenures will be allowed to continue in new PAs, although management conditions may be amended to ensure grazing is compatible with the management goals for the new PAs. Although 8% of range potential would be precluded by new PAs, the overall proportion of range potential in management zones supportive to agriculture is decreased only slightly.

The Scenario slightly increases the proportion of ALR in SMZs (from 13% to 17%).[16] However, a much higher proportion of the ALR is also placed in a new Agriculture / Settlement Zone (ASZ) to the extent of about 80% (vs. 56% in the Base Case), where agriculture will have higher management priority. The Scenario slightly reduces the proportion of range tenures and range potential in SMZs and places about 14% of these values in the ASZ.

---

[14] For example, according to the Ministry of Energy and Mines, while there are nearly 12,000 mineral occurrences in BC, there are 411 developed metallic prospects (i.e. properties with defined mineral reserves), and 17 of these are operating metal mines. Developed prospects are more likely to be the focus of exploration activity that could potentially result in commercial development, resulting in the approximate 1 in 25 probability estimate of becoming a mine at some time in the future.

[15] Since the time of this analysis, a decision has been made and incorporated into the plan content.

[16] Subsequent determinations by the Resource Council have placed all of the ALR not covered by existing woodlot licenses within the ASZ and woodlot licenses, being long-term forest tenures, have been removed from the ASZ. The net effect is a "land swap" with SMZ lands re-allocated to the ASZ to capture ALR concerns, and ASZ lands re-allocated to the SMZ to capture woodlot tenure concerns. The overall effect on the impact assessment is projected to be insignificant in terms of both land area and resource values.

Overall, given the availability of under-utilized agricultural land in the District, and the creation of an Agriculture / Settlement Zone, the Scenario maintains opportunities for long term growth in this sector. However, market factors will continue to be the primary determinant of growth.

Commercial Salmon Fisheries, Trapping, Botanical Forest Products

The Forest Practices Code and existing SMZs in the Base Case will provide some additional protection for commercial salmon species and botanical forest product species. New protected areas in the Scenario will be of some benefit to salmon spawning habitat, trapping and botanical forest products, although there are some offsetting effects. For example, although 12% of salmon spawning habitat in the Forest District would be protected in the Draft Plan, this could be offset by the reduction in SMZs and the placing of an additional 14% in the new ASZ.

The Scenario slightly increases protection of old growth (e.g. 3% of old growth in new parks), which provides support for a number of "nature-based" economic activities.

However, as mature and old growth forests are converted to younger forests, income from trapping of old growth dependent fur bearers (e.g. marten) will likely decline. The potential for some botanical forest products, such as commercially harvested mushrooms, would also likely decline with successive logging passes, especially in GMZ and ITM zones. More formal management of botanical forest products is being considered by MoF, which could better protect some of this potential.

First Nations Concerns

The implications for First Nations will basically mirror overall impacts of the Plan itself. Most of First Nations' employment is in forestry, including the Burns Lake Native Development Corporation which has interests in logging, sawmilling and value-added processing. As noted previously, the forestry impacts of the Draft Plan are relatively minor, since the 6.6% harvest reduction is pro-rated among various license holders (including First Nation licensees) and would likely not occur for 30-40 years.

The land use changes proposed in the Scenario are generally more supportive of the nature-based values which tend to be important to First Nations, although there are still some resource values for which there are offsetting effects (e.g. botanical forest products) or which may still be eroded over time (e.g. spawning habitat, trapping).

Local First Nations have had concerns that new protected areas may preclude some traditional uses, but recommended management strategies to consult with First Nations on this issue and work with them as to the planning and management of parks would appear to mitigate this concern.[17]

---

[17] Lakes LRMP, Draft Document, June 5 1997, p. 74.

5.3 Environmental Resource Analysis

Protected Areas - Ecosystem Representation

Three new PAs are proposed in the Scenario which total about 92 000 ha. of the TSA (9.23% net of water bodies; 8.23% of TSA inclusive of water bodies). Thus, including Tweedsmuir Park / Recreation Area, the overall amount of the plan area that would be fully/partially protected in the Draft Plan is 35.8%. Overall, within the TSA portion of the plan area, the Scenario would achieve some degree of representation in all 4 ecosections and all sub-zone variants except alpine tundra (AT) which makes up less than 1% (2,907 ha) of the TSA. Because Tweedsmuir Park / Recreation Area does not represent the full range of ecosystem types in the Lakes District, the increased representation of sub-zone/variants recommended by the Scenario provides a more representative sample of the ecosystems that occur within the overall plan area.

Old Growth (>140 years old SBS/SPBS; >250 years old ESSF)

Many plant and animal species depend on late-successional ecosystems to successfully survive and reproduce. The proposed Plan allocates almost 40% (99,280 ha) of the old growth forests to SMZ areas. About one-third is allocated to GMZ (sometimes referred to as "IRM") and another 20% (50,471 ha) to ITM (sometimes referred to as "Enhanced Timber") Zones. An additional 6% is split almost equally between the ASZ and new PAs.

In addition to proposed land allocation, the *Timber Supply Review* (1995) also provides an indication of the supply of old forests over time. Because the timber supply impacts appear to be similar between the Base Case and the Scenario, the trend for species dependent on older forests outside of PAs are similar to the Base Case. That is, as mature and old forests are harvested, the proportion of early seral stands increases significantly over the next 50-100 years, which suggests species dependent on early seral stages will benefit most while species dependent on mature and old forests (e.g., marten) remain at risk are likely to occur at lower population levels.

Habitat Linkages ("Strong Links")

Management Strategies outlined by the draft Lakes District LRMP reduce the risks to riparian communities by providing management direction to landscape unit planning processes to address ecosystem connectivity in the development of *Forest Ecosystem Networks* (FENs). 'Strong Links' as identified by MELP will function as interim FENs until landscape unit plans are in place, which suggests the risks to species and ecological processes dependent on riparian habitats are reduced in the short term and possibly the long term as compared to the Base Case.

Although the allocation of much of the area in "strong links" to SMZs (65%) and Protected Areas (15%) is generally positive and provides a key component of maintaining riparian connectivity, upland connectivity remains vulnerable due to the distribution of ITM zones.

Wildlife

Woodland Caribou

Although the Entiako caribou winter range would have been specially managed in the Base Case (which would have likely included a no harvest zone to protect core area around Entiako Lake), the proposed Plan designates all (100%) of the critical winter range as a PA, providing significantly reduced risks associated with resource development (e.g., access). This designation, together with management strategies outlined by the draft Lakes LRMP, provides increased certainty that the winter range will be maintained over the long term.

The Draft Plan also reduces the risks to the Tweedsmuir-Entiako caribou herd by allocating all (100%) of the very high, high, and moderate value caribou migration sub-zones to SMZs. This represents an additional 26% (mostly moderate value) of significant migration habitat that will be managed as an SMZ as compared to the Base Case (74%). In addition, the LRMP's *Chelaslie Caribou Migration Corridor Management Strategy* addresses a number of key issues. For these reasons, the Scenario poses relatively low risks to caribou compared to the Base Case. However, uncertainty remains regarding high value caribou calving habitat in the Tweedsmuir Recreation Area, which may be open to future mineral development.

Grizzly Bear

The Scenario significantly reduces the risks to grizzly bears as compared to the Base Case. This is largely due to increased protection given to one (Sutherland Valley) of the two seasonally important grizzly bear feeding areas in the Lakes District. Approximately 81% of the high value grizzly bear habitat will be protected. (A Protected Area designation is considered to minimize the risks to grizzly bears by significantly reducing the probability of bear-human conflicts that are typically associated with increased resource development, especially increased road access.) Although the Plan does not currently provide a "buffer" or special management designation surrounding the proposed park, *Management Objectives and Strategies* outlined by the Lakes LRMP addresses these concerns by recommending the development of a grizzly bear management and park master plan. These land use strategies suggests risks to grizzly bears will be reduced from relatively high levels in the Base Case to low-moderate levels in the Draft Plan.

Ungulate Winter Range

Deer Winter Range

Moose and Deer winter ranges have been identified as one of four sub-zones in the Special Resource Management Zone category in the draft Lakes LRMP document. Similar to the Base Case, the GIS area analysis indicates over half (51%) of the deer winter range remains in the ASZ. On Crown land, the Plan allocates the majority to SMZs and a small amount (5.85%) to PAs, and reduces the amount in GMZs vs. the Base Case. However, about 8.6% of the deer winter range now overlaps with the proposed AS zone.

Considering the whole TSA, the proposed Plan poses relatively low risks for deer; however, those areas where agriculture and deer winter range overlap are now at higher risk because of potentially declining amounts of mature forest cover.

Management Strategies developed by the Lakes LRMP may partially mitigate potential impacts in these areas.

Moose Winter Range

The Scenario has mixed implications for moose winter range. It increases the amount of moose winter range in SMZs from 31% in the Base Case to 41%, including an additional 5.4% in PAs, which suggests enhanced protection for moose winter range values. However, it also designates 18.7 % of high capability moose winter range to the ASZ. The relatively high percentage (19%) of moose winter range that overlaps with areas that emphasize agricultural development suggests portions of moose winter range is at increased risk in the Draft Plan. The draft Lakes LRMP document recognizes these concerns and has outlined *Management Objectives and Strategies* (e.g., striving to exclude critical winter range from development) designed to mitigate habitat conflict issues.

Overall, however, the distribution of moose winter range among the various RMZ categories suggests implementing the Scenario has both positive and possibly negative implications for moose populations.

Mountain Goat Winter Range

The Draft Plan enhances protection for mountain goats vs. the Base Case by shifting the areas of high value goat winter range from GMZs to more compatible land use designations, including 86% in SMZs and 13% in PAs (Tetzalto Mountain situated in the proposed Sutherland Valley PA). This shift in land allocation together with *Management Objectives and Strategies* (e.g., establishment of *Wildlife Habitat Areas* at headwater of Tildesley Creek) outlined by the draft Lakes LRMP document, indicates relatively low risks to mountain goats and provides increased certainty that mountain goat winter range will be appropriately addressed during landscape unit planning.

Fisheries

Salmon Spawning Habitat

FPC *Riparian Reserve Zones* and *Watershed Assessment* procedures (in the Base Case) reduce the risks to fisheries values, including salmon spawning habitat. The Scenario retains a little over a third (37%) of spawning habitat in SMZs, which is slightly less than the Base Case. However, the Scenario also allocates an additional 12% to PAs. Although this appears to suggest enhanced protection for salmon spawning habitat, a similar increase (14%) in the ASZ indicates diminished benefits and suggests no positive net area effect. Similar to the Base Case, approximately 20% of spawning habitat occurs in Settlement Areas and also remains at risk. However, *Management Strategies* outlined by the draft Lakes LRMP document (inventory, monitoring, designation of sensitive areas as wildlife habitat areas) may mitigate the potential adverse effects of resource development activities that pose risks to spawning habitat.

Significant Fish Streams

Although *Riparian Management and Lakeshore Management Areas* (FPC) are anticipated to provide enhanced protection for fish streams, the Scenario provides some incremental benefits compared to the Base Case by allocating the majority (61%) of significant fish-bearing streams to SMZs, including 9% in PAs. This shift in land allocation suggests reduced impacts to riparian areas and fisheries values, particularly those associated with increased road development. The draft Lakes LRMP document also proposes the development of a strategic fisheries plan that will include the identification and establishment of sensitive fisheries areas. Overall, the proposed Plan indicates enhanced protection for significant fish streams compared to the Base Case and pose relatively low risks to maintaining freshwater fish habitat on Crown land. Fish habitat in ASZs, however, remains vulnerable.

5.4 Conclusions

The quantifiable socio-economic implications of "the Draft Plan" on existing activities arise primarily from timber supply impacts associated with new protected areas and management designations that differ from the Base Case. The socio-economic implications for other sectors are more difficult to quantify and are generally less significant in that they relate primarily to potential opportunities (e.g., possible new mines, potential tourism growth, etc.) rather than existing economic activities.

The Base Case timber harvest is estimated to continue at the current level of 1.5 million m3/yr for 165 years, at which time it could increase to a long term rate of about 1.8 million. After 30-40 years, the Draft Plan could result a harvest reduction of 100,000 m3/yr., and could place 55-80 person-years of employment at risk (2.4%-3.4% of 1991 area employment) before increasing at year 165 to a long term level of 1.7 million m3/yr. Mitigating factors such as salvaging of submerged timber, growth in value-added, and Forest Renewal BC initiatives (i.e., enhanced forestry projects) likely mean that forestry employment as a whole will not decline in the foreseeable future, although average incomes may be lower.

New protected areas and special management for backcountry lakes and high value recreation areas in the Draft Plan preserve more opportunities for a growing BC wilderness tourism sector than in the Base Case, which also contributes to local recreation and can therefore better preserve the quality of life for area residents. There is still some risk of longer term declines in some fish and wildlife populations in the Draft Plan (as in the Base Case), which could constrain activities such as guide-outfitting, commercial fishing and trapping.

Agricultural land in the District is currently underutilized, but the creation of an Agriculture Zone in the Draft Plan means better protection of growth opportunities on Crown land. While the Scenario may result in decreased confidence for mineral investment, no existing or proposed mines are precluded, less than 1% of current metallic mineral exploration areas and only 14% of significant metallic potential is in new protected areas. The Draft Plan does not, however, address potential mining / wildlife conflicts in the Tweedsmuir Recreation Area.

Environmentally, the Draft Plan provides many benefits and reduced risks. This is largely due to the allocation of Special Management Zones where significant environmental values occur (e.g., riparian corridors, caribou migration corridor, ungulate winter range, etc.). The establishment of 3 new Protected Areas also provides significantly enhanced protection for two key large mammal species (i.e., woodland caribou, grizzly bears).

In addition, LRMP direction concerning the conservation of riparian connectivity through the identification and management of 'strong links' indicates a key element of biodiversity (landscape connectivity) has been addressed and provides a framework for the establishment of Forest Ecosystem Networks (FENs) during landscape unit planning.

Although implementing the Draft Plan suggests positive consequences for many environmental values, certain risks remain. For example, although the Scenario provides management direction concerning riparian connectivity through management of 'strong links', the distribution of Intensive Timber Management Zones suggests *interior forest conditions* maybe at risk in upland areas. This would have negative effects on species that require large contiguous patches of mature and old forests (e.g., marten).

A further risk involves the proposed Agriculture/Settlement Zone. Although just how much agricultural development would have occurred in the absence of a land use plan (i.e., in the Base Case) is unclear, the explicit establishment of this zone increases the risks to fish and wildlife habitat. The GIS area analysis indicates conflicts are most severe with moose and deer winter ranges as well as salmon spawning habitat.

CHAPTER 6

Plan Management and Administration

6.1 Plan Adoption

As Corporate Policy

This LRMP document represents the approved corporate policy direction of the British Columbia government for the planning area for a ten year period extending from the date of Plan adoption.

As Legislative Requirement

An additional possible outcome of the above plan approvals process is declaration, as a Higher Level Plan, of those elements of the LRMP pertaining specifically to forest and range management practices which are subject to the operational planning requirements of the Forests Practices Code. Higher Level Plans (resource management zones and objectives) are: declared through ministerial order; signed by the Ministers of Employment and Investment/Forests/Environment, Lands and Parks; and legally enforceable under the *Forest Practices Code Act of British Columbia*.

Adoption of all or a portion of the Lakes District LRMP through the above mechanisms will signal both a policy and legal commitment to implement the Plan according to stated provisions.

6.2 Plan Implementation

Process and Timing

Implementation of the Lakes District LRMP will occur primarily through the ongoing delivery of government programs, policies, and initiatives within the framework of existing legislation, regulation, and management guidelines.

It is expected that government agencies will achieve full implementation of the Lakes District LRMP as expeditiously as possible following Plan adoption. The budget capacity of the province, the complexity and/or priority of specific projects, and the need to integrate LRMP direction with existing legislated decision making processes will influence the time span required to implement various aspects of the Plan document. In some instances (i.e., new operational plan and permit approvals), LRMP direction can be incorporated into decision-making immediately following Plan adoption. In other instances (i.e., existing multi-year operational plans and permits), LRMP direction must be introduced into operational planning and permitting processes at the earliest opportunity (i.e., the next scheduled operational plan/permit update). The good will of agencies, licensees and tenure holders will also play a role in the timely implementation of resource management objectives and strategies.

Implementation Strategy

Some aspects of LRMP direction can be delivered by a single government ministry or agency. Many LRMP objectives, however, will require an integrated approach among several different government agencies. As a result, a coordinated approach to implementation is necessary.

Subsequent to Plan adoption, the Prince Rupert Inter-Agency Management Committee (IAMC) of the provincial government will coordinate the development of a long-term implementation strategy which identifies the actions, priorities, roles and responsibilities, and inter-agency coordination necessary for Plan implementation. Individual government ministries and agencies will then assume responsibility for meeting implementational requirements, including inter-agency coordination.

Three principle groups will be involved in Plan implementation. It is intended that these three groups engage in meaningful consultation over the course of Plan implementation, monitoring, interpretation amendment and review. Responsibility for ensuring Plan implementation rests with the Prince Rupert IAMC. Provincial ministries and agencies will undertake actual implementation. The Lakes District Monitoring Committee will ensure implementation meets the spirit and intent of the LRMP. The Monitoring Committee will work in an advisory capacity to the IAMC, however, final decision authority and responsibility rests with the IAMC.

Roles and Responsibilities

The **Lakes District Monitoring Committee (LDMC)** is a group of local stakeholders, including government representatives, representing various resource values and sectors (Appendix 8). The LDMC will be responsible for:

- reviewing and commenting on LRMP implementation and monitoring strategy,
- advising the IAMC on aspects of Plan interpretation and implementation,
- reviewing and providing recommendations on proposed Plan amendments,
- proposing Plan amendments based on monitoring and implementation reports,
- reviewing and commenting on the annual monitoring report on Plan implementation, and
- reviewing and commenting on terms of reference for scheduled Plan reviews.

The **Prince Rupert Inter-Agency Management Committee (IAMC)** is a team of regional managers representing various provincial ministries which is responsible for the delivery of LRMPs throughout the Prince Rupert region. The IAMC will be responsible for:

- coordinating the establishment of the Monitoring Committee
- coordinate development of an achievable LRMP implementation and monitoring strategy,
- promote LRMP compliance by agencies,
- interpretation of management objectives and strategies to assist with Plan implementation, including dispute resolution,
- preparation of an annual monitoring report on Plan implementation,
- initiating, reviewing, and/or providing recommendations on proposed Plan amendments,

- coordinating scheduled Plan reviews, and
- consultation with the Monitoring Committee concerning issues of Plan implementation, monitoring, interpretation, amendment and review.

Various **provincial ministries and agencies** played a role in the development of the LRMP and will be the primary vehicles for implementation of the provisions of the Plan through the ongoing delivery of government programs, policies, and initiatives. The relevant provincial ministries and agencies will be responsible for:

- implementation and monitoring of LRMP management objectives and strategies,
- ensuring LRMP compliance by resource users,
- advising the IAMC on aspects of Plan interpretation and implementation,
- initiating, reviewing and/or providing recommendations on proposed Plan amendments,
- review of existing local level and resource management plans to ensure consistency with the LRMP,
- dissemination/education of Plan contents to all licensed resource users, resource agency staff, stakeholders and the interested public,
- developing Memoranda of Understanding (MOU), or agreements, among government agencies clarifying objectives, roles and responsibilities on inter-agency activities, and
- participating in scheduled Plan reviews.

6.3 Subsequent Land Use Planning

Strategic Local Level Planning

The Lakes District LRMP provides district-wide strategic guidance for land and resource management. Refinement of strategic guidance at the local scale will be required and, in fact, is acknowledged in several LRMP objectives and strategies. A variety of local level strategic land use planning initiatives can be expected, including:

- landscape unit planning, in compliance with FPC requirements, to refine and integrate a range of resource values and issues at the watershed level;
- integrated range land planning to deal with grazing enhancement and range land ecosystem management priorities;
- recreation planning to ensure sustainable use of identified recreation resources and integration of the full range of recreation opportunities with resource development activities;
- protected areas planning to ensure conservation of identified values both within and adjacent to protected areas, as well as sustainable tourism, recreation and traditional use of protected areas;
- settlement land use planning pursuant to the *Municipal Act* - to develop official community plans or regional growth strategies - will occur under the jurisdiction of municipalities and regional districts; and,
- future local land use planning processes which may be proposed and undertaken to respond to area-specific issues, or to capitalize on opportunities.

In all cases, it is expected that local land use planning initiatives and the resulting products will be guided by, and consistent with, LRMP management direction. Planning methods, mechanisms for public participation, and products expected to flow from local level processes will be determined by provincial policy and the relevant government agencies. In some circumstances, where local level planning processes reveal new information, an amendment to the Lakes District LRMP may be warranted. The requirement for such an amendment will be evaluated according to criteria outlined in Section 6.7 below.

Operational Resource Planning

LRMP direction for various land and resource uses must be interpreted and implemented by appropriate government agencies through existing land and resource use licensing and permitting processes, including operational planning. In the case of forest and range resource uses, direction from the Lakes District LRMP must be integrated with the Forests Practices Code and incorporated into the five year planning process.

Forest licensees, for example, are required each year to prepare/update Forest Development Plans (FDP) which spatially identify proposed harvesting activities for the subsequent five year period. The Ministry of Forests provides instructions to licensees, incorporating any new government policy direction, prior to FDP submission deadlines. It will be necessary to provide operational interpretations of LRMP management direction in order that clear instructions can be given to forest licensees. There may, therefore, be a time lag between LRMP approval and on-the-ground implementation of management practices reflective of LRMP direction. Generally, one to three years of future forestry operations are already approved through previous FDPs and cutting permits.

Memoranda of understanding (MOU) concerning inter-agency activities, as well as strategic local level planning processes (see above), will assist in making the transition from LRMP direction to operational planning by clarifying LRMP objectives at the local level.

6.4 Plan Monitoring

The credibility of the LRMP process rests on effective implementation. Subsequent to Plan adoption, the Prince Rupert Inter-Agency Management Committee (IAMC) will coordinate the development of a long-term monitoring and evaluation strategy which will identify monitoring tasks and develop pre-defined, measurable indicators for assessing progress toward Plan implementation. The Lakes District Monitoring Committee will review the strategy and advise the IAMC concerning aspects of monitoring and evaluation. Fundamental monitoring objectives will include:

- determination of the extent to which management strategies have been or are being implemented,
- evaluation of the degree to which management strategies are effective in achieving the particular objectives which they are intended to promote, and

- testing, on an ongoing basis, of the assumptions which underlie LRMP objectives.

Individual government ministries and agencies will assume responsibility for monitoring those aspects of land and resource management relevant to their mandate. To the greatest extent possible, the strategy will take advantage of existing agency environmental and natural resource management monitoring and research programs. Monitoring and/or research tasks specific to the LRMP will also be identified. Monitoring results will provide a basis for adaptive management decision-making - indicating adjustments to management strategies and/or agency programs, policies and practices that may be warranted in order to realize LRMP objectives.

Where monitoring findings reveal the need for Plan amendment, the Prince Rupert IAMC will be responsible for coordination of those amendments, in accordance with the provisions in Section 6.7 below.

6.5 Annual Public Report

The Prince Rupert IAMC will oversee the development and distribution of an annual public report concerning the status and effectiveness of LRMP implementation. The annual monitoring report will include:

- an outline of actions taken/yet to be taken to implement LRMP management strategies,
- an evaluation of the effectiveness of management strategies in achieving management objectives, and
- proposed actions, where appropriate, to respond to ineffective aspects of implementation.

Following the release of the monitoring report, the IAMC will hold a public meeting within the Lakes District planning area to review the report and solicit public comment. The Lakes District Monitoring Committee will review the monitoring report and advise the IAMC as to any concerns it may have over the degree and effectiveness of LRMP implementation.

6.6 Plan Interpretation and Dispute Resolution

Informal Resolution Process

Public, stakeholder or agency concerns regarding how the Lakes District LRMP is being interpreted, or how specific practices are occurring, will be addressed in the same spirit that the Plan was developed. Concerns regarding any specific resource management practices, or general interpretation issues related to Lakes District LRMP management objectives and strategies, should first be raised directly with the appropriate government agencies. Collaboration at the local level among the public, stakeholders and agencies on issue resolution is strongly encouraged.

Formal Resolution Process

Failing informal local issue resolution, the concern will be dealt with through existing review or appeal processes (i.e., the Forest Practices Code), where such processes exist. In other instances, the responsible manager will respond in writing to the concerned party or parties. If the matter is not satisfactorily resolved, the concern will be forwarded to the Prince Rupert IAMC to determine if the decision is consistent with the approved Plan and define the necessary actions for resolution. The IAMC will outline in writing recommended actions and rationale.

6.7 Plan Amendment

Unscheduled Plan Amendment

One of the primary goals of the Lakes District LRMP is to provide land use stability and certainty for a variety of resource user groups and stakeholders. The Lakes District Resource Council also realizes that, to a certain extent, a plan must be flexible and adaptable in order to incorporate new information which may lead to plan refinements and improvements over time. In addition, other events may trigger the need to consider unscheduled amendments (that is, plan revisions prior to the scheduled review of the entire Plan document).

Unscheduled amendments may arise as a result of:

- new information (i.e., resource analysis, inventory, research and monitoring results) which suggests the need for significant revision or refinement of resource management zone boundaries, objectives or strategies, or which significantly alters assumptions underlying consensus management direction,
- significant refinements to resource management zone and/or sub-zone boundaries or objectives and strategies as an outcome of local level planning,
- the conclusion of a major project proposal review (e.g., Environmental Assessment process decision) which differs from management direction expressed in the Plan,
- significant natural disturbances or environmental change (i.e., fire, insect/disease outbreak) affecting particular areas of the district, and
- those changes required to make the Plan consistent with provincial laws, regulations or policies.

The Prince Rupert IAMC will be responsible for assessing unscheduled amendment proposals and determining the appropriate action to be taken. The IAMC will determine if the underlying issue is pressing in nature, or more appropriately dealt with at the time of the next scheduled amendment. In determining the need for an unscheduled amendment, the criteria below will be used to assess the relative significance of an issue. Generally, where an issue underlying a proposed amendment is deemed to be significant, the IAMC will initiate an unscheduled amendment process.

Significant Plan amendment proposals will be reviewed by the Lakes District Monitoring Committee and will require public consultation. The social, economic and environmental implications of proposed amendments will also be evaluated.

Consultation and evaluation standards and process will be established by the Prince Rupert IAMC.

LRMP management direction is founded upon resource management objectives, strategies and zones. Therefore, proposed amendments will be considered significant if they will result in:

- changes to the planning area boundary such that substantial areas of land are either added or removed from the planning area,
- changes to resource management zone or sub-zone boundaries that would result in re-designation of more than 500 hectares or 5% (whichever is the lesser amount) of the zone/sub-zone area, and
- revisions to particular objectives or strategies which would have the effect of altering resource management intent and/or resource management zone emphasis.

Scheduled Plan Amendment

The Lakes District Land and Resource Management Plan is subject to a scheduled, comprehensive review to commence at the eighth anniversary of Plan adoption to be completed by the tenth anniversary. The Prince Rupert IAMC may also consider annually whether or not a comprehensive review is warranted prior to the scheduled Plan review.

Comprehensive Plan reviews will be conducted in conformance with provincial land use planning policy direction. The Prince Rupert IAMC is responsible for establishing the Plan review terms-of-reference in accordance with policy direction, and for incorporating opportunities for public review into the process.

BIBLIOGRAPHY

Bechard, Chris. 1997. Lakes LRMP Data Dictionary. (unpublished).

British Columbia Ministry of Environment, Lands and Parks. 1992. Policy Proposal: Commercial Backcountry Recreation on Crown Land in British Columbia. Victoria, BC.

British Columbia Ministry of Forests. 1995. Lakes TSA Timber Supply Analysis. Victoria, BC.

British Columbia Ministry of Forests. 1995. Biodiversity Guidebook. Victoria, BC.

British Columbia Ministry of Forests. 1996. Higher Level Plans: Policy and Procedures. Victoria, BC.

British Columbia Ministry of Forests, Recreation Branch. 1994. Visual Landscape Design Training Manual. Victoria, BC.

British Columbia Ministry of Tourism. Visitor '89, North by Northwest Tourism Region.

Cichowski, D.B. 1989. Seasonal Movements, Habitat Use and Winter Feeding Ecology of Woodland Caribou in West Central British Columbia. M.Sc., Univ. BC. Vancouver, BC.

Cichowski, D.B., and A. Banner. 1993. "Management Strategy and Options for the Tweedsmuir-Entiako Caribou Winter Range." Land Management Report, 83. Victoria, BC: MOF

Hoehne, Gunter. 1997. Lakes LRMP Timber Supply Impacts. (unpublished).

Holman, Gary, et al. 1997. Lakes District LRMP: Preliminary Socio-Economic and Environmental Analysis of Draft Land Use Plan ("Scenario O"). (unpublished).

Holman, Gary, et al. 1996. Socio-Economic and Environmental Base Case for the Lakes Area Land and Resource Management Planning (LRMP) Process. (unpublished draft).

Integrated Resource Planning Committee. 1995. Diamond Land and Resource Management Plan: A model report. Victoria, BC: MOF.

Integrated Resource Planning Committee. Land and Resource Management Planning: A Statement of Principles and Process.

Lakes LRMP Resource Council. 1995. Consolidated Issues and Interests. (unpublished).

Lakes LRMP Resource Council. 1994. Lakes LRMP Terms of Reference. (unpublished).

Lakes LRMP Working Group on Beetle Management. Working Group Report.

Lakes LRMP Working Group on the East-Ootsa -South Area. Working Group Report.

Lakes LRMP Working Group on Forestry, Agriculture and Wildlife. Working Group Report.

Lance, Art, N., Ph.D RPBio. 1995. Chelaslie IRM Management Report. Unpublished.

Office of Wet'suwet'en Hereditary Chiefs and Lakes Forest District. 1996-1997 Wet'suwet'en/Lakes Bulkley Watershed Landscape Planning Pilot. Unpublished.

Prince Rupert Forest Region and Lakes Forest District. 1987. Lakes Timber Supply Area Plan 1987-1991.

Prince Rupert RPAT. 1995. Technical Gap Analysis Results: Lakes Forest District. (unpublished).

Prince Rupert Regional Protected Areas Team. 1996. A Protected Areas Strategy for British Columbia. The Prince Rupert Region PAS Report.

Stevenson, S.K, and D.F. Hatler. 1985. Woodland caribou and their habitat in southern and central British Columbia. Land Management Report #23. Victoria, BC. MOF Res. Br.,

Steventon, J. Douglas. 1996. "Caribou Habitat Use in the Chelaslie River Migration Corridor and Recommendations for Management." Land Management Handbook, 37. Victoria, BC: MOF.

LISTING OF RELAVENT ACTS

Agricultural Land Commission Act
Environment and Land Use Act
Environmental Assessment Act
Fisheries Act
Forest Act
Forest Practices Code of BC Act
Heritage Conservation Act
Land Act
Mineral Tenure Act
Mines Act
Mining Rights Amendment Act
Municipal Act
Park Amendment Act
Pesticide Control Act
Petroleum and Natural Gas Act
Range Act
Waste Management Act
Water Act
Wildlife Act

GLOSSARY

aboriginal rights:

Rights to carry out activities that are integral to the distinctive culture of an aboriginal society and were practiced for a sufficient length of time prior to 1846 to have become integral. They may vary according to distinct patterns of historical use and occupancy of land. Aboriginal rights are protected under Section 35 (1) of the *Constitution Act*.

access management plan:

An operational plan that shows how road construction, modification and deactivation will be carried out to protect, or mitigate impacts on known resources or sensitive areas while maximizing the efficacy of forest resource development.

adaptive management:

A systematic process for continually improving management policies and practices by learning from the outcomes of operational programs. The key characteristics of adaptive management are:

1. acknowledgement of uncertainty about what policy or practice is "best" for the particular management issue,
2. thoughtful selection of the policies or practices to be applied,
3. careful implementation of a plan of action designed to reveal the critical knowledge,
4. monitoring of key response indicators,
5. analysis of the outcome in consideration of the original objectives, and
6. incorporation of the results into future decisions.

Its most effective form¾"active" adaptive management¾is characterized by management programs that experimentally compare selected policies or practices and that test alternative hypotheses about the system being managed.

aesthetic values:

The factors/values which make up the landscape; (physical and cultural features, degree of alteration, and landscape sensitivity (both viewer and landscape related)) and how the public sees and values these factors.

age class:

An interval into which the age range of trees, forests, stands, or forest types is divided for classification. Forest inventories commonly group trees into 20-year age increments up to age 140 years, then a single class for trees between 141 and 250 years old, and a single class for those older than 250 years.

agricultural land:

Land that is used for farming, including ranching, and land that has biophysical attributes that make it suitable for agricultural use. The latter includes lands identified by the Canada Land Inventory agricultural capability classes 1 to 5, as well as unique lands that have the capability to sustain agriculture in the regional context.

Agricultural Land Reserve (ALR):

Land designated and reserved for agricultural purposes under the *Agricultural Land Commission Act* (the reserve covers about five percent of the province and includes most of BC's high quality agricultural land). It includes both private and public lands, and covers land being farmed and land with agricultural potential. Non-agricultural uses on the ALR are regulated.

agricultural lease:

Arable Crown land made available for agricultural development. The lease is for a variable term with an option to purchase.

Allowable Annual Cut (AAC):

The allowable rate of timber harvest from a specified area of land. The chief forester sets AACs for timber supply areas (TSAs) and tree farm licenses (TFLs) in accordance with Section 7 of the Forest *Act*.

Annual Allowable Harvest (AAH):

The optimum number of animals that can be removed by harvesting from a herd or population and that can be replenished to meet management objectives through the population's natural productivity.

arable lands:

Lands suited to the production of cultivated crops.

Archaeological Overview Assessments (AOA):

An assessment which assigns a high, medium or low possibility of having archaeology or historic sites to all land within the study area. It must be conducted by an archaeologist or other qualified person.

archaeological sites:

Locations containing or with the potential to contain the physical remains of past human activity. These sites are assessed through archaeological investigations (see also cultural heritage resource).

backcountry lakes:

Boundaries are defined by steep local topography (i.e., heights-of-land) and/or the semi-primitive recreation management zone (i.e., distance from lakeshore of 1 km).

backlog area:

Means an area

(a) from which the timber was harvested, damaged or destroyed before October 1, 1987, and

(b) that in the district manager's opinion is insufficiently stocked with healthy well spaced trees of a commercially acceptable species.

base case:

Present conditions and likely future developments in a planning area in the absence of any changes to existing land and resource management. This should include a description of current resources and resource uses, current management strategies and land use designations, and relevant historical conditions and trends, as well as a discussion of their contribution to current and long term social, economic and environmental conditions. In LRMP, the base case provides a benchmark for scenario evaluation.

biodiversity:

The diversity of plants, animals and other living organisms in all their forms and levels of organization, including genes, species, ecosystems, and the evolutionary and functional processes that link them.

biogeoclimatic zone:

A large geographic area with a broadly homogeneous macroclimate. Each zone is named after one or more of the dominant climax species of the ecosystems in the zone, and a geographic or climatic modifier. British Columbia has 14 biogeoclimatic zones.

blue-listed species:

Sensitive or vulnerable species as identified by the Ministry of Environment, Lands and Parks. Blue-listed species are considered to be vulnerable and "at risk" but not yet endangered or threatened. Populations of these species may not be decline but their habitat or other requirements are such that they are sensitive to further disturbance. The blue list also includes species that are generally suspected of being vulnerable, but for which information is too limited to allow designation in another category.

botanical forest product:

Non-timber based products gathered from forest and range land. There are seven recognized categories: wild edible mushrooms, floral greenery, medicinal products, fruits and berries, herbs and vegetables, landscaping products, and craft products.

Canada Land Inventory (CLI):

A co-operative federal-provincial program designed to provide a basis for land use planning at the municipal, provincial and federal levels of government. It includes assessment of land in the settled portion of Canada, according to there use capability for agriculture, forestry, wildlife and recreation as well as surveys of present land use.

community watershed:

Defined in the *Forest Practices Code of British Columbia Act* as

a) the drainage area above the most downstream point of diversion on a stream for a water use that is for human consumption and that is licenced under the *Water Act* for

i) a waterworks purpose, or

ii) a domestic purpose if the licence is held by or is subject to the control of a water users' community incorporated under the *Water Act*

if the drainage area is not more than $500km^2$ and the water licence was issued before June 15, 1995 or

b) an area that is designated as a community watershed under subsection (10).

connectivity:

A qualitative term describing the degree to which late-successional ecosystems are linked to one another to form an interconnected network. The degree of interconnectedness and the characteristics of the linkages vary in natural landscapes based on topography and natural disturbance regime. Breaking of these linkages results in fragmentation.

consensus:

A "general agreement" as defined and accepted by all those concerned. It assumes that participating parties accept the overall package of decisions reached, even if there is not complete concurrence on each aspect.

corridor:

A band of vegetation, usually older forest, that serves to connect distinct patches on the landscape. Corridors are part of the forest ecosystem network (FEN), and by providing connectivity they permit the movement of plant and animal species between what would otherwise be isolated patches.

critical habitat:

Areas considered to be critically important for sustaining a population and where development may cause an unacceptable decline in the population. A rating of the importance of the habitat (e.g., high, medium, low) may also be used.

critical wildlife habitat:

Part or all of a specific area occupied by a wildlife species or a population of such species and recognized as being essential for the maintenance of the population.

Crown land:

Land that is owned by the Crown; referred to as federal Crown land when it is owned by Canada, and as provincial Crown land when it is owned by a province. Land refers to the land itself and the resources or values on or under it.

cultural heritage resource:

An object, a site or the location of a traditional societal practice that is of historical, cultural or archaeological significance to the Province, a community or an aboriginal people. Cultural heritage resources include archaeological sites, structural features, heritage landscape features and traditional use sites.

dry ecosystems:

Are characterized by steep, grassy, south-facing sloped, often having a brush or deciduous component, and providing the earliest snow-free areas for spring forage.

ecological benchmark:

an unmanaged area having minimum development (E.g., Parks) to which surrounding managed areas may be compared. They provide a tool for assessing the ecological effect of a management regime

ecosection:

An ecological unit based on climate and physiography.

ecosystem:

A functional unit consisting of all the living organisms (plants, animals and microbes) in a given area, and all the non-living physical and chemical factors of their environment, linked together through nutrient cycling and energy flow. An ecosystem can be of any size — a log, pond, field, forest or the earth's biosphere — but it always functions as a whole unit. Ecosystems are commonly described according to the major type of vegetation, for example, forest ecosystem, or range ecosystem.

ecosystem integrity:

The soundness or wholeness of the processes and organisms composing the ecosystem. To maintain ecosystem integrity one must maintain functioning, self-sustaining ecosystems with characteristics similar to the original ones.

edge effects:

Habitat conditions (such as degree of humidity and exposure to light or wind) created at or near the more-or-less well-defined boundary between **ecosystems**, as, for example, between open areas and adjacent forest.

fisheries sensitive zones:

Side and back channels, ponds, swamps, seasonally flooded depressions, lake littoral zones and estuaries that are seasonally occupied by over-wintering anadromous fish.

forest development plan:

An operational plan guided by the principles of integrated resource management which details the logistics of timber harvesting usually over a period of five years. Methods, schedules and responsibilities for accessing, harvesting, renewing and protecting forest resources are set out to enable site-specific operations to proceed.

Forest Ecosystem Network (FEN):

A planned landscape zone that serves to maintain or restore the natural connectivity

within a landscape unit. It consists of a variety of fully protected areas, sensitive areas and old-growth management areas.

forest estate modelling:

A model which successively "harvests" and then "grows" a specified growing stock for a specified number of periods. The therefore describe the time development of the growing stock and the timber harvested.

forest health factors:

Biotic and abiotic influences on the forest that are usually a naturally occurring component of forest ecosystems. Biotic influences include fungi, bacteria, insects, nematodes, other animals and plants. Abiotic influences include frost, snow, fire, wind, sun, drought, and nutrients.

Forest Land Reserve (FLR):

Land designated under the *Forest Land Reserve Act*. This land includes private land within a tree farm licence and private land classed as managed forest land under the Assessment Act, as well as designated Crown land in the Provincial forest. Removal of land from the Reserve is restricted, as is use and subdivision of the land. The purpose of the Reserve is to maintain the commercial working forest of British Columbia.

Forest Practices Code (FPC):

Commonly used to refer to the legislation (including the *Forest Practices Code of British* Columbia Act and associated regulations), standards and guidebooks that govern forest practices in BC

fragmentation:

The process of transforming large continuous forest **patches** into one or more smaller patches surrounded by disturbed areas. This occurs naturally through such agents as fire, landslides, windthrow and insect attack. In managed forests, timber harvesting and related activities have been the dominant disturbance agents.

green up:

The process of re-establishing vegetation following logging to achieve specific management objectives (for example, rate of harvest control, visual cover for wildlife, visual quality, or hydrological recovery). The most common standards of green-up are:

- green-up: the minimum height and stocking levels which trees (as described in either a silviculture prescription or regional stocking standards) on a cutblock must achieve before an adjacent stand of timber may be harvested.
- visually effective green-up: the stage at which regeneration on a cutblock is perceived by the public as being newly established forest. The forest cover on the cutblock must generally be of sufficient height to block stumps, logging debris, and bare ground from view. Once achieved, an adjacent stand of timber is available for harvest.
- hydrological green-up: the point at which a second-growth stand of timber will hydrologically resemble old growth in terms of timing and quantity of water yield.

growth and yield:

Indirect methods (techniques) to predict stand dynamics including growth, mortality, reproduction and associated changes in the stand

guidebooks:

Guidebooks are guidelines and recommendations on how to best achieve the requirements of the *Forest Practices Code of British Columbia Act*. The guidebooks are not legally enforceable. However, specifications and procedures recommended by the guidebooks may be incorporated into plans, prescriptions and contracts in which case those specifications and procedures may become legally enforceable.

habitat:

The place where an organism lives and/or the conditions of that environment including the soil, vegetation, water and food.

healthy ecosystem:

An **ecosystem** in which structure and functions allow the maintenance of **biodiversity, ecosystem integrity** and ecological processes over time.

higher level plan:

Defined in the *Forest Practices Code of British Columbia Act* as

a) a plan formulated pursuant to section 4(c) of the *Ministry of Forests Act* and designated as a higher level plan by the district manager in accordance with direction from the chief forester,

b) a management plan designated as a higher level plan by the chief forester for tree farm licences and by the regional manager for other agreements under the Forest Act,

c) an objective for a resource management zone,

d) an objective for a landscape unit or sensitive area,

e) an objective for a recreation site, recreation trail or interpretive forest site, and

f) a plan or agreement declared to be a higher level plan by
  i) the ministers or
  ii) the Lieutenant Governor in Council under this or any other Act.

identified wildlife:

Defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as those species at risk that the Deputy Minister of Environment, Lands and Parks or a person authorized by that deputy minister, and the chief forester, agree will be managed through a higher level plan, wildlife habitat area or general wildlife measure.

impact assessment:

A study of the potential future effects of resource development on other resources and on social, economic and/or environmental conditions

Integrated Resource Management (IRM):

A land management regime that identifies and considers all resource values, along with social, economic, and environmental objectives, with the goal of resource stewardship guided by the principle of sustainable use.

Interagency Management Committee (IAMC)

The interagency committee of senior land and resource management officials in each region of the province. The committee is responsible for integrating all resource planning and protected areas work in a region and for setting regional planning priorities.

Interagency Planning Team (IPT):

Committee of local resource managers from government agencies who provide technical support for a Land and Resource Management Plan.

interior forest conditions:

Conditions achieved at a point where edge effects no longer influence environmental conditions within a patch. For coastal BC forests, the edge effect is generally felt for a distance equivalent to 2 to 4 times average tree height into the stand. The effects usually involve light intensity, temperature, wind, relative humidity and snow accumulation and melt.

known:

For the purposes of the *Forest Practices Code of British Columbia Act* means a feature, objective or thing that is
(a) contained in a higher level plan, or
(b) otherwise made available by the government at least 4 months before the operational plan is submitted.

Land and Resource Management Planning (LRMP):

An integrated sub-regional consensus-based process requiring public participation that produces a Land and Resource Management Plan for review and approval by government. The Plan establishes direction for land use and specifies broad resource management objectives and strategies.

landscape unit:

Landscape units are planning areas delineated on the basis of topographic or geographic features. Typically they cover a watershed or series of watersheds, and range in size from 5000 to 100 000 ha.

light-hand-on-the-land:

It is a management strategy that attempts to use practices that minimize the effect of resource development and access on both the ecological and visual integrity of the land. It includes practices such as selective harvest and low impact access structures.

local planning:

A term describing a variety of resource planning initiatives undertaken to develop integrated approaches to resource use and development. Typically they have been undertaken to resolve potential land use conflicts in local areas smaller than LRMPs.

mineral:

Ore of metal and every natural substance that can be mined and that either is in place where it was originally formed or deposited, or is in talus rock, and includes rock or other materials from mine tailings, dumps and previously mined deposits of minerals, but does not include: coal, petroleum, natural gas, earth, soil, peat, marl, sand and gravel, and rock and riprap used in the construction of roads, buildings or structures.

mineral development:

The advanced stages of exploration of a mineral deposit with potential to become a mine. Activities may involve: site specific evaluation of mineral deposit; infrastructure construction such as roads, stream crossings, camps, environmental and geotechnical surveys, and other general activities required for preparation of a site for mining.

mineral exploration:

Those activities which are undertaken in the search for and evaluation of coal and minerals, and may include: prospecting; surveying; trenching; drilling; blasting; mechanical ground disturbance; construction, modification, deactivation, and reclamation of exploration access; and site reclamation of soil, vegetation and watercourses.

mineral potential:

The likelihood of a geological tract to contain mineable mineral deposits.

modification VQO:

Alterations may dominate the visual landscape, but should blend with natural features. Up to 25% of the visible area can be altered by harvesting activity.

motorized access:

There is no restriction of access into an area by motorized vehicles. Motorized access on trails, primitive roads, cross country and waterways may occur.

natural disturbance:

Forest cover types resulting from natural disturbance regimes, such as wildfires, windstorms and, to a lesser extent, insects and landslides.

no-staking reserve:

A reserve established by Order-in-Council under the Mineral Tenure Act that prohibits the acquisition of further subsurface tenures. A no-staking reserve may be time-limited or may have an indefinite expiry date.

Non-motorized access:

The restriction of access into an area to all motorized vehicles. No motorized vehicle is allowed to travel on trails, cross country or water ways.

non-recoverable losses:

Fibre that is currently for economic or technology reasons not available for harvest and/or manufacturing. (e.g., Tops below a four inch diameter are not currently being used but it is conceivable that they be chipped and used for particle board.)

objective:

An aim, goal or end of action.

old growth:

Forest that contains live and dead trees of various sizes, species, composition and age class structures. Old growth forests, as part of a slowly changing but dynamic ecosystem, include climax forests but not sub-climax or mid-seral forests. The age and structure of old growth varies significantly by forest type and from one biogeoclimatic zone to another.

old growth management area:

Defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as an area established under a higher level plan which contains or is managed to replace structural old growth attributes.

operational plan:

Forest Practices Code of British Columbia Act states that within the context of area-specific management guidelines, operational plans detail the logistics for development. Methods, schedules, and responsibilities for accessing, harvesting, renewing, and protecting the resource are set out to enable site-specific operations to proceed. Operational plans include forest development plans, logging plans, access management plans, range use plans, silviculture prescriptions, stand management prescriptions and five year silviculture plans.

partial retention VQO:

Alterations are visible but not conspicuous. Up to 15% of the area can be visibly altered by harvesting activity.

patch:

A stand of similar-aged forest that differs in age from adjacent patches by more than 20 years. When using the term patch in designing landscape patterns it refers to the size of either natural disturbance openings which led to even-aged forests or those openings created by cutblocks.

protected area:

A land designation for areas of land and water set aside to protect natural heritage, cultural heritage or recreational values (may include national park, provincial park, or ecological reserve designations).

Protected Areas Strategy (PAS):

The Provincial government strategy in place to meet BC's commitment to develop and expand the protected areas system to protect 12% of the province by the year

2000. The goals of the strategy are to protect viable, representative examples of natural diversity in the province, and special natural, recreational and cultural heritage features.

Provincial Forest Reserve (PFR):

Crown land in the Provincial forest designated under the *Forest Land Reserve Act*. It is part of the forest land reserve and is for the purpose of maintaining the commercial working forest in British Columbia.

range:

Any land supporting vegetation suitable for wildlife or domestic livestock grazing, including grasslands, woodlands, shrublands and forest lands.

range development:

Defined in the *Forest Practices Code of British Columbia Act* as

(a) a structure or excavation related to the management, for range purposes, of range land or livestock, and

(b) a practice, excluding grazing, that is designed to improve range conditions or facilitate more efficient use of range land for range purposes.

range land:

Defined in the *Forest Practices Code of British Columbia Act* as Crown range and land subject to an agreement under section 17 of the *Range Act*.

range use plan:

An operational plan that describes the range and livestock management measures that will be implemented to ensure that range resources are protected and that the management objectives for other identified resource values are achieved.

recreation:

Any mental or physical revitalization and the voluntary pursuit of leisure activities. Outdoor recreation is recreation that takes place out-of-doors, and forest recreation takes place in a forest or wildland setting.

Recreation Opportunity Spectrum (ROS):

Types of recreational experiences, physical settings, structures and services, access, management settings and social settings that, in combination, describe the recreational opportunities in an area. The five ROS classes, based on criteria of remoteness, area size and evidence of human use, are: primitive, semi-primitive non-motorized, semi-primitive motorized, roaded resource land, and rural.

recreation resource:

Defined in the *Forest Practices Code of British Columbia Act* as

a) a recreation feature,

b) a scenic or wilderness feature or setting that has recreational significance or value, or

c) a recreation facility.

recreation site:

A site and its ancillary facilities established under section 6 of the *Forest Practices Code of British Columbia Act* or designated under the *Forest Act* before the coming into force of this act and developed by the Ministry of Forests for recreation or to protect a recreation resource.

red-listed species:

Threatened or endangered species as identified by the Ministry of Environment, Lands and Parks. The taxa on the red list are either Extirpated, Endangered or Threatened, or are being considered for such status. Any indigenous taxon (species or sub-species) threatened with imminent extinction or extirpation throughout all or a significant portion of its range in British Columbia is Endangered. Threatened taxa are those indigenous species or sub-species that are likely to become endangered in BC if factors are not reversed.

regional mine development review process:

regionally important species:

Species which are not red- or blue-listed, that require management practices that differ from standard integrated resource management guidelines in order to fulfill critical habitat needs; or locally or regionally threatened or declining species or those that may reasonably be expected to decline without protection of critical habitats.

resource feature:

As defined in section 51 (1) of the *Forest Practices Code of British Columbia Act* includes all of the following

a) a cultural heritage resource
b) a recreation feature
c) a range development
d) any other feature designated in the regulations (1)

Resource Management Zone (RMZ) — from regional or sub-regional plan:

A division or **zone** of the planning area that is distinct from other zones with respect to biophysical characteristics, resource issues or resource management direction. Resource management zones (in LRMP these include settlement, agriculture, high intensity resource development, general resource development, low intensity resource development and protection) may be drawn on a map to describe general management intent. The zones are usually further defined using descriptive objectives and strategies to explain future land use and resource management activities.

resource value:

Values on Crown land which include but are not limited to biological diversity, fisheries, wildlife, minerals, oil and gas, energy, water quality and quantity, recreation and tourism, natural and cultural heritage, timber, forage, wilderness and aesthetic values.

retention VQO:

Alterations are not easy to see. Up to 5% of the visible landscape can be altered by harvesting activity.

riparian:

The land adjacent to the normal high water line in a stream, river or lake and extending to the portion of land that is influenced by the presence of the adjacent ponded or channeled water. Riparian areas typically exemplify a rich and diverse vegetative mosaic reflecting the influence of available surface water.

riparian complexes:

Groupings of swamps, black spruce types, wet brush areas and cottonwood flats which function as an ecological unit and provide linkages between other habitat types.

scenario:

A complete and workable set of resource management zones, objectives and strategies for the planning area which represent one potential option for analysis purposes.

scenic area:

Any visually sensitive area or scenic landscape identified through a visual landscape inventory or planning process carried out or approved by the district

scenic viewscape

(or Scenic Landscape) Those views of the landscape that are perceived, preferred or otherwise valued by the public.

semi-primitive recreation:

Recreation opportunities which provide a moderate to high probability of experiencing solitude, closeness to nature, self-reliance and challenge and a low possibility of interaction with other people. There are limited facilities for signing, sanitary and safety needs.

seral stages:

The stages of ecological succession of a plant community. e.g., from young stage to old stage. The characteristic sequence of biotic communities that successively occupy and replace each other by which some components of the physical environment become altered over time.

sensitive areas:

Small areas established to manage or conserve small area of unique or locally significant resource values.

silviculture:

Silviculture is the art and science of controlling the establishment, growth, composition, health and quality of forests and woodlands. Silviculture entails the manipulation of forest and woodland vegetation in stands and on landscapes to meet the diverse needs and values of landowners and society on a sustainable basis.

silviculture prescription:

A site-specific operational plan that describes the forest management objectives for an area. It prescribes the method for harvesting the existing forest stand, and a series of silviculture treatments that will be carried out to establish a free growing stand in a manner that accommodates other resource values as identified.

site:

An area described or defined by its biotic, climatic, and soil conditions in relation to its capacity to produce vegetation; the smallest planning unit.

socio-economic analysis:

An assessment of the impacts of a course of action on the social and economic well-being of a community, region, or the province as a whole. When socio-economic analysis is expanded to include environmental impacts it is generally referred to as social, environmental and economic (SEE) impact assessment (see also multiple accounts analysis (MAA)).

strategic land use planning:

Planning at the regional, sub-regional and, in some cases, at the local level which results in land allocation and/or resource management direction. Strategic land use planning at the regional and sub-regional level involves the preparation of resource management zones, objectives and strategies.

strategies:

Specific management instructions to achieve an objective.

sustainability:

A state or process that can be maintained indefinitely. The principles of sustainability integrate three closely interlinked elements — the environment, the economy and the social system — into a system that can be maintained in a healthy state indefinitely.

threatened or endangered plant communities:

Ecosystems, as listed by the Conservation Data Center, that:

- are restricted in their distribution over a natural landscape (e.g., freshwater wetlands within certain biogeoclimatic) or are restricted to a specific geographic area or a particular type of local environment; or
- were previously widespread or common but now occur over a much smaller area due to extensive disturbance or complete destruction by such practices as intensive harvesting or grazing by introduced species, hydro projects, dyking, and agricultural conversion.

timber:

In terms of industrial logging, any trees or stands of trees that are commercially valuable.

Timber Supply Area (TSA):

An integrated resource management unit established in accordance with Section 6 of the *Forest Act*. TSAs were originally defined by an established pattern of wood flow from management units to the primary timber-using industries.

tourism:

The aggregate of all business that directly provides goods or services to facilitate business, pleasure or leisure activities away from the home environment.

traditional use sites:

A geographically defined site that has been traditionally used by one or more groups of people for some type of activity. These sites will often lack the physical evidence of human-made artifacts or structures, and maintain cultural significance to a living community of people. Traditional use sites are usually documented with the assistance of oral historical or written archival sources. Examples include: sacred sites, ritual bathing pools, resource gathering sites such as berry-gathering grounds and culturally modified trees, and the site of a legendary or past event of cultural significance (see cultural heritage resource).

Traditional Use Studies (TUS):

The detailed mapping of traditional use sites for operational planning to ensure that aboriginal rights are not infringed.

UREP:

Use and Recreational Enjoyment of the Public

value-added:

Products produced from a log having a market value which is greater than the equivalent volume of primary lumber products which could be produced from the same log. (e.g., wood trim and cabinet parts)

visual areas:

Areas that have assigned Visual Quality Objectives based on MOF visual inventory. It includes scenic and visually sensitive areas.

visual landscape inventory:

The identification, classification, and recording of the location and quality of visual resources and values.

visual landscape management:

The identification, assessment, design and manipulation of the visual features or values of a landscape, and the consideration of these values in the integrated management of Provincial forest and range lands.

visual quality:

The character, condition, and quality of a scenic landscape or other visual resource and how it is perceived, preferred, or otherwise valued by the public.

Visual Quality Objective (VQO)

A resource management objective established by the district manager or contained in a higher level plan that reflects the desired level of visual quality based on the physical characteristics and social concern for the area. Five categories of VQO are commonly used: preservation; retention; partial retention; modification; and, maximum modification.

visually effective green up: (see green up)

watershed:

An area of land that collects and discharges water into a single main stream through a series of smaller tributaries.

watershed assessment:

Defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as an evaluation of the cumulative impact that proposed activities and developments would have on stream flows, suspended sediment, landslide and stream channel stability within the watershed.

wetland:

A swamp, marsh or other similar area that supports natural vegetation that is distinct from adjacent upland areas.

wildlife:

Defined in the *Forest Practices Code of British Columbia Act* as

(a) a vertebrate that is a mammal, bird, reptile or amphibian prescribed as wildlife under the *Wildlife Act*,

(b) a fish, including

(i) any vertebrate of the order Petromyzoniformes (lampreys) or class Osteichthyes (bony fishes), or

(ii) an invertebrate of the class Crustacea (crustaceans) or class Mollusca (mollusks) from or in the non-tidal waters of the Province, and

(c) an invertebrate or plant listed by the Minister of Environment, Lands and Parks as an endangered, a threatened or a vulnerable species, and includes the eggs and juvenile stages of these vertebrates, invertebrates and plants.

Wildlife Habitat Area (WHA):

Defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as a mapped area of land that the Deputy Minister of Environment, Lands and Parks, or a person authorized by that deputy minister, and the chief forester, have determined is necessary to meet the habitat requirements of one or more species of identified wildlife.

ACRONYMS

AAC: Allowable Annual Cut

AAH: Annual Allowable Harvest

ALR: Agricultural Land Reserve

ASZ: Agriculture/Settlement Zone

AT: Alpine Tundra Zone (a biogeoclimatic zone)

BEN: Biological Ecosystem Networks

BEO: Biological Emphasis Option

ESSF: Engelmann Spruce Subalpine Fir Zone (a biogeoclimatic zone)

FEN: Forest Ecosystem Networks

FLR: Forest Land Reserve

FPC: Forest Practice Code

GIS: Geographic Information System

GRMZ: General Management Zone

IAMC: Interagency Management Committee

IPT: Interagency Planning Team

IRM: Integrated Resource Management

ITMA: Intensive Timber Management Area

LDMC: Lakes District Monitoring Committee

LRMP: Land and Resource Management Plan

LU: Landscape Unit

MEI: Ministry of Employment and Investment

MELP: Ministry of Environment Lands and Parks

MEM: Ministry of Energy and Mines

MOF: Ministry of Forests

MOU: Memorandum of Understanding

MPB: Mountain Pine Beetle

OCP: Official Community Plans

PAs: Protected Areas

PFR: Provincial Forest Reserve

ROS: Recreation Opportunity Spectrum

RMZ: Resource Management Zone

SBFEP: Small Business Forest Enterprise Program

SBPS: Sub-Boreal Pine-Spruce Zone (a biogeoclimatic zone)

SBS: Sub-Boreal Spruce Zone (a biogeoclimatic zone)
SRMZ: Special Resource Management Zone
TSA: Timber Supply Area
UREP: Use and Recreational Enjoyment of the Public
VQO: Visual Quality Objective

APPENDIX 1

Lakes District LRMP Participants

Lakes District Resource Council

CO-CHAIRS

Bob Murray
District Manager
Lakes Forest District

Miles Fuller
Wildlife and Fisheries Representative

Gloria George
Land Information Manager
Lakes Forest District

COMMUNITY REPRESENTATIVES

SECTOR	SEAT HOLDER	ALTERNATE
AGRICULTURE	Helmut Hummel	
	Mary Litke-Renshaw	
COMMUNITY ASSOC.	John VanderEnde	
ENVIRONMENT	Rolf Hussinger	Nathan Nicholas
	Frank Lehmann	Rick Wilsgard
	Kathy Simonds	
FORESTRY	(Vacant)	
	Jim Peebles	
	Klaus Posselt	
	Tom Olafson	Bill Laforge
	Tan Calhoun	Jim McCormick
	Bob Schneider	
MINING	Bob Schneider	Bill Miller
RECREATION	Aidan Carroll	
	Herb Neville	
TOURISM	Renata Stoiber	Susan Scheinbein
	(Vacant)	
WILDLIFE/FISHERIES	Miles Fuller	Denise Fuller
	Judy Stratton	Stewart Berg
	Bill Waldron	Dave Gooding
HUMAN RESOURCES	Shonte Williams	
HERITAGE/CULTURE	Russ Skillen	
SM. COMMUNITY INT.	Gwendolyn Nicholas	

GOVERNMENT REPRESENTATIVES

(INTERAGENCY PLANNING TEAM)

Gunter Hoehne (1994-1999)
Lakes District LRMP Process Co-ordinator
Prince Rupert Inter-Agency Management
Committee

Gloria George
Land Information Manager
Lakes Forest District
Ministry of Forests

Margaret Bakelaar
Land Officer
BC Lands
Ministry of Environment, Lands, and
Parks

Gary Glinz
Zone Manager
BC Parks
Ministry of Environment, Lands, and
Parks

Bruce Whyte
Planner
Inventory and Resource Planning Branch
Ministry of Small Business, Tourism and
Culture

Elizabeth Zweck
Program Manager
Inter-Agency Management Committee
Prince Rupert Forest Region

Dave Riendeau
District Agriculturist
Ministry of Agriculture, Fisheries and
Food

Cynthia Kaufmann (1994-1995)
Hanna Dickinson (1996)
Chris Bechard (1996-1997)
Lisa Moore (1997-1999)
Lakes District LRMP Process Co-ordinator
Prince Rupert Inter-Agency Management
Committee

Mary Lou Malott
Mineral Lands Planner
Ministry of Employment and Investment

Pierre Lemieux
Habitat Biologist - Skeena/Nass
Fisheries and Oceans Canada

John Stadt
Forest Ecosystem Specialist
BC Environment
Ministry of Environment, Lands, and
Parks

Rob Kline
Resource Planning Specialist
Ministry of Agriculture, Fisheries and
Food

Gord Enemark
Senior Analyst - Impact Assessment
Ministry of Employment and Investment

Wayne Martin
Operations Manager
Lakes Forest District
Ministry of Forests

APPENDIX 2

Abridged Issues and Interests

Early in the Lakes District LRMP process, the Lakes District Resource Council devoted considerable time to identifying the full range of issues and interests that affect the land, its resources and the people living within the planning area. The summary that follows is a condensed version of the interests identified by sectoral representatives on the Resource Council. The document, *Consolidated Issues and Interests (Lakes District LRMP, 1995)*, expands on these summary interest statements. Determining how land use and resource management practices could meet these interests, both now and in the future, was a core activity in subsequent stages of the LRMP process.

WILDLIFE SECTOR

Functional wildlife habitat across the landscape - Management of habitat, identification and inventory of habitats, enhancement, monitoring, education.

Healthy and sustainable wildlife populations - Management of populations, inventory and monitoring.

Use of Wildlife - Consumptive commercial, consumptive non-commercial, non- consumptive, regulation and limits.

Use of Chemicals - Herbicides and pesticides.

FISHERIES SECTOR

Fish habitat - water quality, disturbance from access and motorized water sports.

Healthy fish populations - management practices.

Inventory.

TIMBER SECTOR

Timber Supply - sustainable for community stability, determining sustainable timber supply accommodating land base and management assumptions.

Tenure - diversity of tenure sizes, diversification within the industry (i.e. value added).

Tenure Administration - fair and equitable assessment of all operations and tenures, reduction of paper work, monitoring of performance, rewards for performance.

Forest Health - environmental concerns, susceptible stands, salvage strategy and methods.

Revenue from Local Resources - fair and equitable returns from all tenures, more local resource dollars staying in the district.

Mill Waste

Forest Growth and Yield - inaccurate and inappropriate use of information.

Silviculture - basic and intensive silviculture strategy, alternative silviculture systems and harvesting methods, state of plantations, vegetation management.

Miscellaneous.

RECREATION SECTOR

Recreation Opportunities - maintain a range of access opportunities, maintain opportunities for a range of activities, provide range of tenure opportunities.

Forest Service Recreation Sites and Trails - site and trail planning and management.

Inventory - visual landscape, recreation features, recreation opportunity spectrum, trails, local resources.

Parks - main viewpoints in a park viewing areas outside parks, access adjacent to parks, development activities adjacent to parks.

Miscellaneous

MINING SECTOR

Exploration Opportunities - access and land use uncertainty

Exploration Approval Process - faster approval processes that address environmental concerns, operational conflicts (exploration evidence)

Environmental Concerns - resource assessment, mitigation measures, monitoring.

ENVIRONMENT SECTOR

Ecosystem management and biological diversity.

Soil productivity - sensitive soils, degradation, nutrients, monitoring.

Air and water quality - monitoring.

Monitoring - adaptive management, inherent value.

Forest health - fire, disease, use of chemicals.

Global effects - acid rain, ozone depletion, global warming.

HERITAGE AND CULTURE SECTOR

Inventory of values - unique opportunity for education and business, pre- and post-European history.

Protection of values - sensitivity to destruction and vandalism.

AGRICULTURE SECTOR

Agricultural Land - agricultural land disposition process, resource conflicts (forestry, environment, wildlife).

Range Management - secure supply of forage, environmental concerns.

Use of Chemicals - effect on livestock of chemical use in clearcuts and private land, effect of chemical use on the environment, noxious weed control.

Inventory - agricultural land capability and supply, forage capability and supply.

TOURISM SECTOR

Recognition and Promotion

Secure Products - long term protection of resource values, different ways of protecting different values.

Range of Opportunities - opportunities for a range of activities, tenures and access.

Data - user data and surveys, facility/supplier data, values and features inventory.

Miscellaneous

ACCESS ISSUES

Strategic Access Plan - range of access opportunities to meet specific resource objectives and needs.

Construction and Maintenance - environmental concerns, construction strategy guidelines, maintenance strategy (erosion control plan).

Multi-use corridors and rights-of-way

HUMAN RESOURCES SECTOR

Local Employment Opportunities - Importance of local employment from local resources, retraining of workers, education.

Employment Stability - jobs per cubic meter, technology.

Sustainable Use of Resources - sustainability, standard and quality of life.

ABORIGINAL CONCERNS

Inventory of values - traditional use, land claims, territories, heritage sites.

Fair consideration - generated revenues, employment opportunities.

Fiduciary responsibilities.

OTHER ISSUES

1. **Ease of information sharing between agencies and with the public.**

APPENDIX 3

Chelaslie Caribou Migration Corridor Management Strategy

An LRMP sub-committee was formed in 1995 to recommend management options for both the caribou migration corridor and wilderness recreation opportunities to the Resource Council. The recommendations which follow were used by the Resource Council to formulate strategic direction with respect to the caribou migration corridor. This full management strategy (the final report of that sub-committee) provides additional detailed guidelines to support operational level resource management.

The following document is the final report of the Lakes District LRMP Working Group on the East-Ootsa-South Area. Geographically, this area corresponds with the Chelaslie Caribou Migration Corridor and, although other natural features of the area were taken into consideration, the group's recommendations to the LRMP deal primarily with caribou habitat management.

BACKGROUND

Following an urgent and pressing issues discussion at the May 13, 1995 Land and Resource Management Plan (LRMP) meeting, the Resource Council deemed it necessary to develop a working group to address strategic issues in the East Ootsa South area relating to the interaction of forest harvesting proposed in the area and particularly caribou use in the area. Other unique natural features of the area were also to be included in the discussion as agreed to by the sub-committee.

The sub-committee met four times (July 12, July 25, September 13, and October, 1995) in 5-6 hour sessions each. The Terms of Reference of the sub-committee (see Appendix I) includes the focus of the group, the proposed issues, membership and sub-committee organizational information. At the first meeting Debbie Cichowski of BC Parks presented an overview of the ten years of research into the Tweedsmuir-Entiako herd; Doug Steventon of the Ministry of Forests Research Branch discussed caribou habitat use and management strategies; and Art Lance of Industrial Forestry Services presented the conceptual framework behind the management plan he devised for the area. Debbie Cichowski and Doug Steventon also attended two of the three subsequent meetings and aided the subcommittee in drafting objectives and guidelines for the East-Ootsa-South area.

This document constitutes the report to the LRMP Main Table from the Working Group on the East-Ootsa South Area.

Tweedsmuir-Entiako Caribou Herd

The Tweedsmuir-Entiako caribou herd migrates through this area from its summer range in Tweedsmuir Park and the Coast Mountains to the west to its winter range in the Entiako Lake-Laidman Lake area to the south-east. This area is also utilized as an alternate wintering area for parts of the herd

In 1983 BC Environment began monitoring radio collared caribou to determine basic seasonal movements and habitat use. From 1985 to 1988 a more intensive study on winter habitat use and feeding strategy study took place involving a number of government agencies. The objectives were to monitor seasonal movement and habitat use, winter habitat selection, winter feeding site selection and population status.

One component of the study inventoried the availability of winter habitat and then monitored use in order to answer the question whether caribou preferentially selected certain habitat types. The highest use areas, and the habitat types preferentially selected, were mature pine on low/poor growing sites and esker sites with well drained gravely soils. The sites selected appear contrary to optimal foraging theory (open canopy stands with deep snow), but they are conducive with lichen ecology. In mixed pine-spruce stands caribou forage on both terrestrial and arboreal lichens. Forested wetlands provide mainly arboreal lichens and lakes are used for watering holes.

A second component of the study investigated the availability of foraging sites and caribou use. Caribou use increased with lichen cover and stand openness and were not affected by depth and penetrability of snow. Caribou can smell lichens through snow cover. *Cladina* sp. was the preferred forage, with *Cladonia* and *Stereocaulon* sp. less frequently selected. Terrestrial lichen succession begins with *Stereocaulon* sp., then *Cladonia* sp., and finally *Cladina* sp. Stands become established in 50 to 100 years, the lichens grow into mats, and finally reach a period of no net growth.

In 1993-1995 more intensive monitoring of caribou migration and habitat use in the East-Ootsa-South area was initiated when potential forest development became imminent. The study found the amount of wintering use was variable (i.e. one year 50% of the collared caribou remained in the East-Ootsa-South area most of the winter) but the selection of habitat was similar to that in the Entiako winter range studies. A wide range of stand types were used, with a preference for mature pine on poor sites (greater lichen abundance) and forest/wetland complexes (a variety of forage). Some ground investigations of caribou locations (A. Lance, IFS) also found the caribou selecting for sites within stands similar to that described in the Entiako study. Forest type selection was less distinct during the late winter/spring migration period, although wetland/forest complexes remained attractive there was more use of the better site mature forests. It was also apparent that there are portions of the area that consistently receive heavier use by the caribou, particularly in the vicinity of Chief Louis Lake and the upper Chelaslie river.

Population size and rate of change has also been investigated. This is an extremely difficult task and the results are not conclusive. Population size is estimated at between 400-500. Calves are born to lone females in June in rugged alpine terrain as part of an anti-predator strategy. A 95 % pregnancy rate indicates no shortage of bull or social problems; however calf mortality could be 50 % and occurs early. Calf mortality is often from predation by bears and adult mortality includes wolf and bear predation and accidental death. Adult mortality is estimated at 20-25 %, greater than the estimated recruitment rate of ~10%, indicating that the population is in a slight decline though the analysis of this data is incomplete at present.

General Objective

The maintenance of quality caribou habitat and movement opportunities. This is required to allow caribou migration during spring and autumn and to provide for winter range. This requires maintaining the variety of stand conditions, with greatest emphasis on mature pine on good terrestrial lichen sites, preventing increased predation on caribou, and minimizing human disturbance. Management strategies directed to meeting this overall objective will also contribute to the maintenance of habitat for other species and their populations and thus contribute to ecosystem health and biodiversity.

A secondary objective to maintain opportunities for wilderness tourism was also discussed, however consensus was not achieved on how to incorporate this objective into the East Ootsa South area.

Strategy Area

The area involved is south of Ootsa Lake, north of Tetachuck Lake and bordered on the west by Tweedsmuir Park and continuing east to Jim Smith Point (see figure 9). The area has been subdivided into five Caribou use sub-zones. These subzone designations are relative terms relating to caribou use within the planning area. Thus even areas designated Low Use may contain small areas of relatively high quality caribou habitat. The subzones are as follows:

1. Very high use. Along Tetachuck Lake (Zone D).
2. High use. Migration corridor between Zones B &D (Zone C).
3. Very high use. Chief Louis and Uduk Lakes and Chelaslie River (Zone B).
4. Moderate use (Zone A).
5 Low use. Along Ootsa Lake (Zone E).

OBJECTIVES and STRATEGIES

Objective 1: Maintain landscape connectivity of quality caribou habitat

Strategies in all subzones

- Fragmentation of forest should be avoided in all subzones. Fragmentation is the process of transforming large contiguous forest patches into smaller patches surrounded by disturbed areas. Fragmentation leads to declines in biodiversity through loss of habitat, the increase in edge effects as the size of forest patches are reduced, and through the increasing isolation of the remaining forest patches, which can impose barriers to gene flow and dispersal (Biodiversity Guidebook 1995). Thus development should be clustered in such a way as to promote the retention of large contiguous areas of older forests. This involves the development of larger blocks, placed more closely together, containing windfirm and representative habitat retention areas.

- Seral stage distribution management guidelines for each of the subzones. Note that the High Use seral stage management subzone lumps the areas of subzones B, C, and D. The High Use subzone guidelines are based on maintaining 100 % of the "natural" old and mature seral area, where "natural" area is determined through principles outlined in Appendix 4 in the Biodiversity Guidebook. The Moderate Use and Low Use subzone values are based on 75 % and 50 % respectively of the High Use zone values A fire rotation interval of 150 years was used in the calculations for the SBS seral proportions instead of 125 years (as in the Biodiversity Guidebook) as this more accurately reflects the fire rotation interval in this area. See Appendix II for present seral stage distributions within subzones A, B, C and D.

Seral Stage Management Zones	Seral Stages		
	> 140 Years	> 80 Years	< 40 Years
High Use (B, C, and D)	≥ 40 %	≥ 60 %	≤ 25 %
Moderate Use (A)	≥ 30 %	≥ 45 %	≤ 32 %
Low Use (E)	≥ 20 %	≥ 30 %	≤ 54 %

NOTE: In agreeing to these objectives and strategies, members of the forest sector have requested it be noted that, although the seral stage objectives recommended by the LRMP are based on informed professional judgement, they feel this judgement may be overly conservative in relation to their understanding of the biodiversity guidebook.

- Retain good lichen sites as patches within cutblocks

Strategies specific to High Use subzones (B, C, and D)

- Focus logging in areas of low priority to caribou. Caribou/human interactions less likely to occur in subzone C than in subzones B and D.
- Role of IFS IRM Report:
  i. The principles for managing forest development within the migration corridor area contained within the Integrated Resource Management Plan for the Chelaslie Caribou Migration Corridor by IFS will be followed. The above plan area is divided into the "IRM plan area" and a "deferred plan area". The planning in the report only refers to the IRM plan area. The IRM plan area falls entirely within the area designated by this report as "High" and "Very High".
  ii. Within the area covered by the IRM plan produced by IFS, harvesting will be restricted to the caribou-impassable timber areas as mapped out in the above plan. It is understood that the harvesting may not take place in the exact locations indicated in the IRM plan as long as it occurs within the mapped caribou-impassable timber areas
  iii. The "Deferred Plan Area," as mapped in the IRM plan produced by IFS, bordering Tweedsmuir Park and Tetachuck Lake falls largely within the "Very High" subzone. It is understood that development may occur within this "Deferred Plan Area" falling outside the "Very High" subzone as long as it conforms to the "caribou-impassable" area principle discussed in the point above and to the objectives for the caribou management subzones contained in this Appendix.
- Operational harvesting will not occur in subzones B and D ("Very High Use"). Management in these subzones will be for forest health reasons only and these activities will be guided by the principle of protecting the integrity of caribou habitat.

- High priority forest health management is necessary to prevent catastrophic events requiring large scale management activities that would threaten the integrity of habitat in subzones B, C, and D. See Appendix III for forest health management guidelines.
- No access to non-tenured motorized users. Lichens are fragile and are easily damaged by motorized vehicles.

Objective 2: Access control to minimize caribou/human interactions

Strategies

- No access into subzones B and D is the desired objective. However, where access is the only alternative, a rigourous joint agency (MOELP and MOF) approval process is required. This approval process should consider caribou objectives as the top management priority. ***(Mining interest input required)***
- A high level of access control is required in the areas immediately adjacent to subzones B and D to meet the above objective. Road construction within 1 km of these subzones should be minimized and avoided as much as possible. Access control will involve the full deactivation of all on-block roads within 500 metres of the boundary of subzones B and D and a high level of deactivation of all other access structures within 1 km of these subzones.
- Access control points to be located at the Chelaslie River bridge on the Chelaslie Main and at the beginning of the Blanchet Road. Signage to be posted at access points with reasons for closure.
- Avoid activity when caribou are migrating. Access closures at the above control points will occur from April 1 to May 31 for the spring migration and October 1 to December 1(Note: Ministry of Environment, Lands and Parks would prefer to see closure extended to December 7) for the fall migration. Planting activities are permitted during the spring migration although such activity should be concentrated in space and time.
- Access closure dates for the Chelaslie River bridge and Blanchet Main may be adjusted in the fall based on results of radio-relocation overflights. In the absence of overflights the gates at these two locations will be closed from October 1 to December 1 (see above bullet).
    i. If overflights prior to October 1 indicate caribou moving into the Uduk Lake - Chief Louis Lakes area, the gates will be closed early. If an overflight just prior to October 1 indicates that caribou are still well within the park and have not started migrating, Ministry of Environment, Lands and Parks staff may, at their discretion, authorize the gates to remain open beyond October 1 until migration begins. This depends on an overflight schedule frequent enough to detect the beginning of migration.

    ii. If overflights prior to December 1 indicate that all the caribou have moved south of Tetachuck Lake, Ministry of Environment, Lands and Parks staff may authorize the early opening of the gates.

- Minimize road building. No loop routes on haul roads should be created. Special treatment of this area in the LRMP strategic access plan (i.e. higher level of deactivation of roads than required in the Forest Practices Code).

  Development in the "High" zone will be concentrated in time. For example development in a pass would take between 2 and 5 years followed by a 15 to 18 year period of inactivity.

- Road material sites to be chosen that avoid disturbance of lichen areas (e.g. eskers).

  Recommend reintroduction of hunting regulations for East Ootsa South zone that existed prior to 1989 which prevented motorized hunting beyond 0.25 miles of a lakeshore.

Objective 3: Special management for Area East of Park Boundary and North of Chief Louis Lake

(Consensus not reached on objectives to be met or on strategies to be utilized)

Management Strategy A: Wilderness Tourism Subzone with no industrial activity.

Background: The south shore of Ootsa Lake from the Tweedsmuir Park boundary to Chief Louis Lake have long been a prime recreation and tourism area used by hikers, hunters, photographers and wildlife viewers. Users have also documented that the area provides good moose and grizzly bear habitat. The values that make this area valuable to tourism and wildlife are being threatened by the construction of roads and forestry development.

Proposal: The rare nature of unroaded areas that have high wilderness tourism values make it important to set aside this area for wilderness tourism purposes before the values that make this area unique are lost. The majority of the Lakes Forest District is available for timber harvesting. This requires roads and extensive human disturbance on the landscape making these areas unsuitable for wilderness tourism. This area should be set aside from the timber harvesting land base to allow for future opportunity for wilderness tourism ventures. New wilderness tourism ventures cannot occur in Tweedsmuir Park as the limit there has already been reached. It is important to designate this area for wilderness tourism to allow for an expansion of wilderness tourism opportunities. Secure resources are required in any industry before investments and markets can be pursued and to date this has not been carried out in the Lakes Forest District for the wilderness tourism industry. This proposal is an important step in maintaining and promoting an important industry in the Lakes Forest District.

Management Strategy B: Buffer zone with some industrial activity but management priority given to wildlife habitat and wilderness values.

The adjacency of this area to Tweedsmuir Park and the important caribou range along Chief Louis and Uduk Lakes requires that this area be very carefully managed. This area should be managed to provide a buffer from intensive industrial activities to the east and the wilderness values of Tweedsmuir Park and the caribou management subzone (B). The management objective of this buffer zone is to preserve wilderness tourism values and protect the quality of the caribou migration and wintering habitats. Thus, while some industrial activity can occur in this area, the management priority is to preserve wilderness and wildlife habitat values. In order to minimize caribou-human interactions, access management would be a high priority with no permanent access permitted in this area. Selective cutting is the preferred silvicultural system as it maintains the visual quality of the landscape for wilderness tourism values. Spur roads that permit access close to subzone B (Very High Use - Uduk Lake area) will be preferentially deactivated. Access control structures will be installed at the Chief Dump.

Management Strategy C: Manage area sensitively to allow integration of caribou, timber and visual quality values.

This area provides many different values to a variety of resource users and wildlife. Caribou is the wildlife species of highest management concern in this area. However, with careful planning it is possible to maintain caribou and other wildlife habitat values and still extract timber resources. Careful planning would involve identification and protection of good lichen sites, the maintenance of movement corridors for caribou, and access management to minimize caribou human interactions. On-going monitoring of caribou migration and habitat use have shown that the area occurring in subzone E receives low caribou use. The management strategy in this area will be to control access into subzone B along Uduk and Chief Louis Lakes. Seral stage distribution targets in this area will correspond to the targets set for subzones B, A and E. Spur roads in subzone A (Moderate use) that permit access close to subzone B (Very High Use - Uduk Lake area) will be preferentially deactivated. Access control structures will be installed at the Chief Dump.

Objective 4: Prioritize research to improve integration of caribou and timber values

- Lichen recovery after disturbance. This study should be coordinated with studies proposed in the Entiako/Laidman Lakes area of the caribou winter range. It is suggested that this study involve the establishment of permanent plots.

Investigation of different silvicultural systems. Questions to be addressed could include whether younger stands promote lichens and whether different methods of thinning promote lichen establishment and growth.

Habitat use study. This would include an investigation of caribou use of blocks after harvesting.

Investigation of caribou, moose, wolf predator-prey interactions. Populations of other prey species, such as moose, should be monitored as significant changes in their population levels could alter predator-prey relationships in the area.

- Continue caribou herd monitoring activities to increase understanding of caribou habitat use over time and what specific areas this herd utilizes.

Objective 5: Monitoring

Monitoring requirements will encompass two areas; to ascertain compliance with all aspects of the Plan in the present and future and to follow the progress of research on the Tweedsmuir caribou herd and its habitat needs.

An LRMP monitoring subcommittee will be established and will be comprised of Government representatives from the Ministry of Forests and Ministry of Environment, Lands and Parks, stakeholders (i.e. registered trappers and guide outfitters), First Nations, Forest tenure holders (Fraser Lake Sawmills), and interested members of the public who have particular concerns and/or expertise related to the Tweedsmuir caribou herd and its habitat.

The Ministry of Forests and Ministry of Environment, Lands and Parks will maintain primary responsibility for monitoring compliance of the Plan once it is approved and implemented. Compliance monitoring will take place during all phases of any operation. All Silviculture Prescriptions within subzones B, C, and D will be reviewed by both ministries. Copies of Forest Development Plans and Silviculture Prescriptions will be made available to Monitoring Committee members for review prior to approval. All blocks within caribou high use subzones (B, C, and D) will be considered high risk for Ministry of Forests monitoring purposes (timber inspections). Continuous public involvement will remain an integral part of the monitoring strategy through existing Forest Development Plan and Silviculture Prescription advertisement processes. Through Annual Reports, Fraser Lake Sawmills and any other licensee operating in this area will document any activity that occurred within the plan area on a yearly basis.

The East Ootsa South Monitoring Committee will advise and assist the government agencies who have legal authority over this area in monitoring compliance and monitoring research projects. The committee will meet at least once a year or at the call of the committee members.

Appendix I

TERMS OF REFERENCE

FOR

LAKES LRMP WORKING GROUP ON EAST OOTSA SOUTH AREA

1.0 Introduction

Following an urgent and pressing issues discussion at the May 13, 1995 Land and Resource Management Plan (LRMP) meeting, the Resource Council deemed it necessary to develop a working group to address strategic issues in the East Ootsa South area relating to the interaction of forest harvesting proposed in the area and particularly caribou use in the area. Other special natural features of the area will be included in the discussions as agreed to by the subcommittee.

2.0 Purpose

To *assess the strategic issues* identified in the East Ootsa South area and to *seek consensus agreement* on strategic recommendations to be made to the whole LRMP Table.

2.1 Scope

Area:

The area involved is south of Ootsa Lake, north of Tetachuck Lake and bordered on the west by Tweedsmuir Park and continuing east to Jim Smith Point. Areas beyond may be considered where the sub-committee members agree on such areas.

Focus:

The issues will include those identified below, but will not be limited by this list. The members will concentrate their discussion on all relevant issues to the development of strategic recommendations for the LRMP table. Amendments to current operations and plans will not be considered until the working group has developed its strategic recommendations and they are endorsed by the LRMP Resource Council. Where strategic recommendations affect operational activities, Ministry of Forests staff will, with the cooperation of the appropriate licensee, amend the permitted activities.

2.2 Issues

The issues to be addressed include:

- Caribou - logging interaction.
- Timber right-to-harvest re-location.
- Caribou habitat.
- Strategic roading issues.

3.0 ORGANIZATION AND PROCEDURE

The organizational structure provides for the participation of interested members of the Resource Council, members of the Interagency Planning Team and any other interested public.

3.1 Membership

According to the Lakes Land and Resource Management Plan Terms of Reference Section 6.4.4, the Chairperson of the working group shall be a member of the Resource Council.

The initial membership includes:

Facilitator: Colin Harivel.

Chairperson: John Stadt, BC Environment.

Administrative Support: Loretta Stadt.

Resource Persons:

Debbie Cichowski, BC Parks.

Keith Mooney, Ministry of Forests.

Doug Steventon, Ministry of Forests.

Working Group Members:

Rolf Hussinger, Tom Olafson, Kathy Simonds, Judy Stratton, Pete Vahi.

Others may attend the meetings but will not participate in the work of the committee unless expressly scheduled to provide technical presentations.

3.2 Working Group Responsibilities

The working group will commit to acquiring understanding of issues, procedures, and policies that affect caribou and harvesting in the East Ootsa South area. The group will participate in the developing of strategies and guidelines to overcome contentious issues and present these to the LRMP Table. Participants will observe the principles of consensus building as stated in the Lakes Land and Resource Management Plan Terms of Reference Section 7.1.

3.3 Meetings

The working group will meet monthly at locations agreed to by the membership. The first meeting should take place by July 15, 1995. The first meeting will be devoted to an overview assessment of the issues.

4.0 Dispute Resolution

Refer to Lakes Land and Resource Management Plan Terms of Reference Section 7.2. Decisions on recommendations will be agreed upon by consensus. Consensus is defined as agreement to the extent that all participants are willing to support the outcome or use it as a basis for further discussion (LRMP TOR Section 7.1).

5.0 Termination of Working Group

The anticipated time of the work is three to four months, assuming monthly meetings. The Chairperson of the working group will disband the working group and present reasons for deactivation to the LRMP Table. The working group, having accomplished its purpose in section 2.0 above, will be terminated.

East Ootsa South - Seral Stage Distibution

Existing Age Class Distribution

Age Class

ZONE	0	1	2	3	4	5	6	7	8	9	1 to 9
A	2124.48	3013.4	109.52	154.76	320.56	575.28	1902.12	3032.84	12811.8	453.36	22373.64
B	1957.8	0	0	4.8	0	0	82.2	1082.92	6021.64	299.12	7490.68
C	2586.92	3898.1	121.56	1583.88	6587.84	2586.36	3507.68	1922.84	19599.5	980.88	40788.64
D	784.32	52.32	0	442.8	1620	1897.64	1336.28	1242.44	1581.76	0	8173.24
Grand total	7453.52	6963.8	231.08	2186.24	8528.4	5059.28	6828.28	7281.04	40014.7	1733.36	78826.2

	Seral Stage Distribution %			Seral Stage Distribution (ha)			
Zone	*< 40 yrs*	*> 80 yrs*	*> 140 yrs*	*ha*	*< 40 yrs*	*> 80 yrs*	*> 140 yrs*
A	14.0%	83.9%	59.3%	22374	3123	18775	13265
B	0.0%	99.9%	84.4%	7490.68	0	7486	6321
C	9.9%	70.1%	50.5%	40788.64	4020	28597	20580
D	0.6%	74.1%	19.4%	8173.24	52	6058	1582
B to D	7.2%	74.6%	50.5%	56453	4072	42141	28483
				78826			

ha that could be logged "today"

A	22% x 24498	4922.2008
B to D	8.2% x 61782	4516.2048
		9438.4056

Appendix III

FOREST PROTECTION STRATEGIES

Introduction

Purpose: To provide overall guidance in addressing forest protection strategies within the Chelaslie migration corridor as determined by the Lakes Land and Resource Management Plan East-Ootsa-South subcommittee.

The forest protection strategies address concerns for
a) Fire protection
b) Management of forest insect infestations
c) Windthrow

Various management tools are prescribed for each of the planning areas designated within the Chelaslie migration corridor. The management tools prescribed are a function of the resource values that exist within the planning areas and reflect a recognition of the overall objective of maintaining a viable spring and fall migration corridor between Tetachuck Lake and Tweedsmuir Park and maintaining prime winter areas adjacent to Chief Louie and Uduk Lakes.

The strategies described below will create and maintain the following set of conditions:

1) Forest protection occurrences will be detected early and described accurately in terms of size and location. "Rapid Initial Attack" will be employed to prevent further spread into adjacent forest stands.

2) Management tools used for each planning area will follow the attached matrix for the appropriate forest protection concern.

3) Where an analysis is required to determine the option of harvesting the effected timber, all resource values (including maintenance of caribou migration and winter habitat) will be considered in relation to the economic, social, and ecological impact of removing timber from the area. Government agencies and/or those responsible for monitoring the Chelaslie migration corridor will, through a process agreed to by the Land and Resource Management Plan Resource Council, determine whether to harvest or not to harvest. Those areas that are not harvested will be monitored and quantified.

4) The direct cost of control actions and those responsible for control actions will be determined by policies in effect for the Lakes TSA.

Table 1. Chelaslie migration corridor fire protection matrix.

Management Subzones	Early Detection	Rapid Initial Attack	Fire Escalation -Ground crew -Equipment Support	Harvest Salvageable Timber
Very High Use (B and D)	Yes	Yes	Yes ("Light hand on the land")	Require Analysis
High Use (C)	Yes	Yes	Yes	Require Analysis
Moderate Use (A)	Yes	Yes	Yes	Yes

a) Rapid Initial Attack may include the following: air tankers, initial attack teams transported by helicopters, and ground transport if existing development provides suitable access.

b) Fire escalation occurs when Rapid Initial Attack can not contain the fire. The employment of ground crews and heavy equipment are then used to control the fire. The use of "Light hand on the Land" fire control tactics will meet the dual objective of fire control and protection of environmental values. Heavy equipment will only be used when risk to caribou habitat values by fire exceeds risk of habitat damage caused by heavy equipment.

Table 2. Chelaslie migration corridor forest insect infestation control matrix.

Management Subzones	ANNUAL SURVEYS -Air surveys overview	GROUND SURVEYS -Probes	HOLDING ACTION Pheromone Fall & Burn	MSMA*	Harvest Infected Trees
Very High Use (B and D)	Yes	Yes	Yes	Analysis required	Analysis required
High Use (C)	Yes	Yes	Yes	Analysis required	Analysis required
Moderate Use (A)	Yes	Yes	Yes	Yes	Yes

* Monosodium methane arsenate - an insecticide and herbicide

a) An annual aerial survey will be conducted in late spring-early summer to detect current beetle activity

b) Ground probes will be conducted in areas found to have current beetle activity. Ground probes will determine the extent and exact location of infected timber and will record the resource values that are present in the area. Caribou habitat such as lichen ground cover will also be recorded.

c) Holding action such as pheromone baiting and fall and burn will be the primary management tool in controlling barkbeetle outbreaks. Where these tools do not control epidemic beetle populations the use of MSMA (monosodium methane arsenate) and/or harvesting affected timber will be considered.

Table 3. Chelaslie migration corridor windthrow matrix.

Management Subzones	EARLY DETECTION - Aerial surveys	GROUND SURVEYS	HARVEST AREA < 4 ha	HARVEST AREA ≥ 4 ha
Very High Use (B and D)	Yes	Yes	No	Analysis required
High Use (C)	Yes	Yes	Analysis required *	Analysis required
Moderate Use (A)	Yes	Yes	Yes	Yes

a) Early detection - Annual aerial flights and/or aerial flights after severe windstorms will be conducted to identify areas that have windthrow.

b) Ground surveys will be carried out in those areas found to have windthrow. The extent and exact location of the windthrow will be recorded along with the resource values that occur in the area. Caribou habitat such as lichen ground cover will also be recorded.

* Analysis required by Ministry of Forests and Ministry of Environment, Lands and Parks with the monitoring committee advised.

APPENDIX 4

Interim Mountain Pine Beetle Management Strategy

NOTE: The following appendix was referenced in the original Management Direction Report submitted by the Resource Council. Based on subsequent government decisions (most notably the decision on the Entiako protected area) references to this Appendix do not appear in this final LRMP document. Recognizing the important role it played in the development of the original recommendations, and the potential application of the principles it contains to management within the plan area, this Appendix is included in this final document. This Appendix represents neither government policy on nor approved direction for mountain pine beetle management within the planning area.

A LRMP sub-committee was formed to make recommendations to the Resource Council regarding Mountain Pine Beetle Management. The reports created by that sub-committee were reviewed by the resource council and changes recommended. The suggested changes were incorporated into the following sub-committee report which was included in drafts of the LRMP for Resource Council review. The recommendations which follow were used by the Resource Council to formulate strategic direction with respect to the Mountain Pine Beetle Management.

The following document is the final report of the Lakes District LRMP Working Group on Mountain Pine Beetle Management. The group's principal concern was with the management of mountain pine beetle within proposed protected areas in the interim between recommendation to Cabinet and the assumption of full management responsibility by BC Parks. The strategy is also proposed as a basis for any long term mountain pine beetle management protocol between BC Parks and the Ministry of Forests. These provisions may also have relevance for long term mountain pine beetle management for the Backcountry Lakes and Recreation Areas sub-zones identified in Chapter 4 under Special Resource Management Zone direction.

I. INTRODUCTION

Mountain Pine Beetle (MPB) has become a high profile issue in both the Lakes District and neighbouring forest Districts and Regions. Forty years of aggressive fire suppression has allowed older forests, those most susceptible to MPB attack, to dominate the landscape. Infestation levels in the District are on the increase generally and, in some areas, are rising at an exponential rate. Areas of the Lakes District currently experiencing rapid beetle population growth include: North Francois, South Francois, Tetachuk, and the Entiako. As the Tetachuk and Entiako are remote and possess high caribou values, beetle management in these areas is consuming an increasing amount of the District's operational budget. Given economic and social concerns, clearly defined strategies are needed for these areas of the District outlining the preferred management options for MPB control.

The expected creation of a number of new protected areas in this and neighbouring regions promises to provide new MPB management challenges. Experience suggests that parks and adjacent forests be managed together to ensure that values both in and outside protected areas are not lost. The recent prescribed burn in Tweedsmuir Park, conducted jointly by BC Parks and the Ministry of Forests, provides an example of this "integrated" management. It was in the context of concern over MPB management practices, both in high value caribou and protected areas, that the Beetle Management Sub-Committee of the Lakes LRMP Resource Council was struck.

II. BACKGROUND

(a) General MPB Management Practice in the Lakes District

Mountain pine beetle is a natural component of the regional ecosystem. Beetles are endemic throughout the Lakes District, with differing growth patterns in different areas. The current management response is complex, employing a number of management strategies and incorporating a range of resource values. Following is a general overview of current management practice in the Lakes TSA, outlining the full range of strategic approaches and management options available in addressing the MPB issue.

First, hazard mapping is used to identify highly susceptible stands (typically, stands which are pine leading, age >60yrs, high density, and low elevation). Risk of infestation for susceptible stands is further assessed based on proximity to existing infestation centres. Annual monitoring of infestation outbreaks, then, is a critical component of MPB management as it enables strategic targeting of the management response.

Second, a management strategy must be selected based on resource values, and the extent and distribution of beetles. Management strategies include:

- **prevention** - prevent outbreak from occurring
- **suppression** - reduce outbreak to a size that can be handled by District resources
- **maintain low** - prevent outbreak from recurring while prioritizing salvage of recently killed timber
- **holding action** - maintain outbreak at current level until harvest
- **salvage** - major salvage effort in response to catastrophic infestation event
- **abandon** - allow natural infestation/mortality/regeneration cycle to run its course.

Prevention would require pre-emptive logging, or "beetle-proofing," of susceptible stands - not always an option where non-timber resource values are concerned. The primary strategy adopted by the Prince Rupert Forest Region is suppression. The intent is to attempt to manage the natural MPB cycle to avoid catastrophic or epidemic events and, in this way, preserve various ecological, economic and social forest values. This strategy is also the most proactive (next to prevention), an important consideration given the persistent nature of MPB infestation and its potential for explosive growth.

The third aspect of MPB management is the consideration of treatment options in the implementation of the selected strategy. Treatment options include...

Area-Based Treatments (reduction actions):

- **pheromone baiting** - use of pheromone baited trees to reduce the spread of beetles and hence facilitate detection and follow-up controls;
- **harvesting** - both sanitation of infested trees and salvage of dead timber; remove heaviest beetle concentrations first;

- **beetle proofing** - preventative measure to reduce hazard by removing high risk susceptible host trees; integrated into long-term planning & biodiversity goals;
- **prescribed burn** - burning of infested and dead timber; useful for no-access areas where holding actions not relevant;

Single-Tree Treatments (holding actions):

- **fall and burn** - infested trees felled, bucked piled and burned; stumps burned or peeled; $40-60/tree with road access; $100-130/tree helicopter access
- **debarking** - experimental; extends window for single-tree treatment; costs similar to fall and burn; and,
- **MSMA** - single tree pesticide treatment; environmental effects localized to treated trees; riparian buffers as safety measure for pesticide use.

Selection of treatment options depends upon the resource value being emphasized, access constraints, and the nature and extent of the infestation. Area-based treatments are economically more efficient, and are typically employed to reduce the incidence and spread of infestation. Single-tree treatments are more costly, and are typically employed as holding actions until such time as reducing actions can be implemented.

(b) Management Practice in Protected and Sensitive Areas in the Lakes District

Recent examples of MPB management in protected and/or sensitive management areas in the Lakes District include: Tweedsmuir Provincial Park, the Entiako caribou winter range, and the Chelaslie caribou migration corridor.

In the case of **Tweedsmuir Park**, a major infestation in the park posed a significant threat to adjacent timber resource values. Beetle management in provincial parks is a BC Parks mandate. Parks assumes responsibility for acquiring funding and controlling beetles where necessary to protect park resource values. The tendency is to let natural processes run their course within park boundaries. Given the combination of park and adjacent timber values, MOF and BC Parks developed a joint proposal for a prescribed burn as the preferred method of MPB control. The project was jointly implemented in the fall of 1995. FRBC funded the project based on its forestry research value.

The McGibbon Hill timber salvage, in the **Entiako caribou winter range**, demonstrates options for MPB management in sensitive wildlife habitat where access is of particular concern. Based on aerial surveys and ground probes, a snip, skid and boom operation was proposed to harvest an MPB infestation centred on McGibbon Hill in the summer of 1996, approximately 1 km inland from the south shore of Tetachuk Lake. Due to the location of the infestation - away from existing road networks and core winter range areas, and near the shore of a large lake - an experiment with temporary ground access was proposed in the belief that caribou habitat values would not be compromised.

Only directly affected trees, together with those removed for purposes of access and safety, were removed. Access and structures were fully rehabilitated immediately following harvest. Harvest areas are to regenerate naturally. Problems arose when inadequate probing led to an underestimation of the extent of the infestation, and low water levels delayed access through the Tetachuk narrows for equipment and log booms. Access was upgraded from skid trail to bladed trail in order that a truck could be used to expedite removal of the increased volume of infested timber in the shortened timeframe prior to beetle flight. This situation might have been avoided if more timely and effective probing had enabled harvesting to commence the previous fall. Limited access through the Tetachuk narrows due to low water levels will continue to constrain windows for entry and removal of both equipment and log booms.

The report of the East-Ootsa South sub-committee divides the **Chelaslie Caribou Migration Corridor** into very high, high, moderate and low use sub-zones. The report recommends aerial survey, ground-based probing, and single-tree treatments for MPB control in all sub-zones. There is disagreement on the use of MSMA and harvesting of infested trees in the very high and high use sub-zones. Ground-based access, most efficient for harvesting infested timber, raises poaching and predation concerns for the caribou. MSMA, the lowest cost single-tree treatment, raises concerns over the introduction of toxins into the environment through overuse and/or accidental spills. MSMA and harvesting are secondary options in the moderate use sub-zone.

The very high use sub-zones of the migration corridor are no-harvest areas (excepting for forest health management and caribou habitat maintenance/enhancement). In those subzones having harvesting objectives, where permanent access is already in place, MOF believes there is an opportunity for greater recovery of beetle infested wood through ground-based "snip & skid" operations (the most cost effective means of controlling the spread of MPB to other areas). Because these areas are part of the productive forest landbase, the intent would be to salvage as much of the beetle infested timber as possible within the constraints of maintaining caribou habitat. An important consideration would be determination of the point at which the cumulative effects of removal of infested timber impact upon caribou habitat.

III. RECOMMENDATIONS for PROPOSED PROTECTED AREAS

Given, in the Lakes Forest District ...

⇒ the increasing instance of MPB infestation,
⇒ the high numbers of MPB susceptible stands,
⇒ the constraints on available funding for management,
⇒ the need for proactive and integrated management,
⇒ the range of available management strategies and treatments,
⇒ the provincially significant caribou values,
⇒ the provincially and regionally significant protected areas values,
⇒ the value of timber resources adjacent to protected areas,
⇒ the potential for conflict between management options for MPB and the maintenance of other values, and
⇒ the limitations on the range of management/access options in protected areas

... the Beetle Management Working Group of the Lakes District LRMP recommends, with respect to interim mountain pine beetle management in proposed protected areas, the following:

(a) General Intent of Interim MPB Management in Proposed Protected Areas

- The following mountain pine beetle management provisions shall be applied in proposed protected areas in the interim period between recommendation to Cabinet of the Lakes District LRMP and their establishment in law as protected areas. Once established in law, mountain pine beetle management protocols in Protected Areas will be established between MELP (Parks Branch) and MOF (Lakes District).

- In the pursuit of mountain pine beetle, priority shall be given to protection of those values which form the basis of the protection designation.
- Where removal of affected wood by harvesting is permitted (i.e., helicopter logging, snip-and-skid within 2 km of boundary with working forest), only directly affected trees together with those required for access and safety considerations will be removed.
- In the transitional period between the adoption of the LRMP and the development of protected areas management plans, MOF and MELP will jointly administer the mountain pine beetle management recommendations.

(b) Broad Strategy for Interim MPB Management in Proposed Protected Areas

The following MPB management options are to be applied, in order of priority, beginning with Option 1 and ending with Option 5. There was no group consensus as to the general applicability of Option 6. It has been identified as an option in the interim MPB strategy specific to the Entiako PPA as outlined below.

1. Standard inventory process as presently conducted in District including regular over-flights and probing of infestation centres (minimum 100m sampling radius).
2. No treatment. Allow natural MPB cycle to run its course where protected area and adjacent timber values are not at unacceptable risk.
3. Any of: fall and burn, prescribed burn, or helicopter selective logging. Limited responsible use of all terrain vehicles and snowmobiles in support of these options is acceptable.
4. Temporary harvesting access trails and structures for purposes of fire risk management[18] ., within 2km of boundary with adjacent working forest.
    - full rehabilitation of access and structures immediately following harvest. Rehabilitation to include natural obstructions (i.e., logs and uprooted stumps) placed across access points/trails to discourage motorized access.
    - plant trees on access trail concurrent with rehabilitation,
    - harvest areas to regenerate naturally, and
    - trails not to create continuous access parallel to protected area boundaries.

---

[18] Fire risk management is defined as a situation where prescribed burning creates a significant risk to adjacent timber or prescribed fire is unlikely to be effective in controlling MPB population.

5. As a last resort, there will be limited use of MSMA on small, isolated infestations remote from human habitation. MSMA will not be applied within a minimum 30m buffer of all lakes and streams (exact buffer width, number of trees to be treated, and size of treatment area to be determined on a case by case basis).

6. Temporary harvesting access trails and structures for purpose of fire risk management[18] only, within 2 km of boundary with adjacent working forest Blading of trails may be acceptable where terrain conditions require this for safety considerations, provided operations meet the standards of the McGibbon Hill salvage operation of 1996, and blading of trails does not constitute upgrading to road access.

(c) Specific Interim MPB Management Strategy for the Entiako Proposed Protected Area

1. Provisions 1-3 and 5 under "Broad Strategy for Interim Mountain Pine Beetle Management in Protected Areas" apply.
2. Temporary harvesting access trails and structures for purposes of fire risk management[18] using unbladed skid trails only within 2km of south shore of Tetachuk Lake/Euchu Reach. Further measures include:
   - full rehabilitation of access and structures immediately following harvest. Rehabilitation to include natural obstructions (i.e., logs and uprooted stumps) placed across access points/trails to discourage motorized access.
   - plant trees on access trail concurrent with rehabilitation
   - harvest areas to regenerate naturally
   - no access from north shore of Tetachuk Lake for log booms
   - trails are not to create continuous access parallel to the shorelines
3. Temporary harvesting access trails and structures for purposes of fire risk management[18] only within 2 km of the south shore of Tetachuk Lake/Euchu Reach. Blading of trails may be acceptable where terrain conditions require this for safety considerations, provided operations meet the standards of the McGibbon Hill salvage operation of 1996, and blading of trails does not constitute upgrading to road access.

(d) Mountain Pine Beetle Policy Recommendations for Proposed Protected Areas

1. It is recommended that the province recognize that management of mountain pine beetle issues associated with protected areas are incremental to regular forestry operations.
2. It is recommended FRBC and /or other appropriate funds be applied to mountain pine beetle issues toward proper protection and management of provincially and regionally significant resource values.
3. In the interests of preservation of the values for which an area is protected, it is recommended that park management plans developed for protected areas establish a quantitative upper limit to disturbance as a result of beetle management interventions.

APPENDIX 5

Visual Landscape Management Strategy

This Visual Landscape Management Strategy was developed in response to concerns that visual quality management constraints in the Timber Supply Review, developed under pre-Forest Practices Code management criteria, were overly constraining. Green-up requirements of 6.5m resulted in excessively long harvest rotations which did not make ecological sense in relation to the natural disturbance cycle of forests within the Planning Area. The strategy outlined below provides a guideline (based on the Forest Practices Code) for management of visual resources within the District, and has the effect of relaxing visual quality constraints on timber harvesting, while placing emphasis on more careful management of the visual landscape in areas of scenic importance within the Lakes District.

Objective:

To maintain visual values throughout the Lakes Forest District, for both visually sensitive landscapes and scenic areas, consistent with Forest Practices Code (FPC) objectives for visual quality (VQOs).

Strategies:

- Identify scenic areas, through visual landscape inventory and public concern, for recommendation by LRMP (LRMP recognized list of Scenic Areas below).
- Identify areas with visually sensitive landscapes, through the visual landscape inventory.
- Continual update of inventory as more detailed information becomes available.
- Follow percent alteration tables outlined by the FPC.
- Follow Ministry of Forests Visual Landscape Design Training Manual.
- Follow guidelines for Visually Effective Green-up (VEG) Height.
- Place increased emphasis on management of visual quality in Scenic Areas.
- Field check all areas of visual concern to ensure VEG is obtained.

Background:

Visually Effective Green-up (VEG) occurs when regeneration is perceived by the public as a newly established forest. It is achieved when the forest cover has regenerated, following harvest, to the point where it generally blocks the view of harvesting activities, such as stumps, logging debris, skid trails, roads, bare ground, etc..

When developing guidelines for VEG:

- Tree height is the best variable for predicting VEG.
- Slope percent is a significant contributing factor.
- As slope increases tree height must also increase to ensure VEG is met.
- Areas with VQO of Retention are in the foreground area and are generally quite visible.

The following tables act as guidelines in determining tree height requirements for meeting VEG:

Table 1: Visually Effective Green-up for Scenic Areas

VQO: Retention									
slope (%)	0	10	20	30	40	50	60	70	80+
tree ht (m)	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0+
VQO: Partial Retention									
slope (%)	0	10	20	30	40	50	60	70	80+
tree ht (m)	3.0	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5+

For visually sensitive areas other then scenic areas, the following green-up heights would apply:

Table 2: Visually Effective Green-up for Visual Sensitive Areas

VQO: Retention									
slope (%)	0	10	20	30	40	50	60	70	80+
tree ht (m)	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0+
VQO: Partial Retention and Other VQOs									
slope (%)	0	10	20	30	40	50	60	70	80+
tree ht (m)	3.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0+

Visually Effective Green-up for Non visual areas: 3.0m green-up throughout all slope classes.

By applying the above parameters throughout the District, there is a significant change in visual landscape management constraints as compared to the TSR/Base-Case analysis. The base case used an average 6.5m green-up height for all Retention and Partial Retention areas throughout the District. Three representative Scenic Areas were assessed using the above slope/tree height tables. It was found that the average tree height would be about 5.0m for Retention areas and 4.5m for Partial Retention. It was also noted that about 80% of the slopes within these areas were between 0% and 30 %.

This suggests that in the short term, available timber may be freed up from adjacency concerns sooner, as presently Licensees are waiting for young stands to reach 6.5m. For the long term, there would be a shortening of time between passes as well as an increase in available timber. Visual inventories for both Scenic and Visually Sensitive Areas will be updated on a continuous basis.

Recommended Scenic Areas within the Lakes District:

Hwy 16 Corridor
Burns Lake South
Decker Lake
Burns Lake
Babine Lake
Augier Lake
Knapp Lake
Francois Lake
Tchesinkut Lake
Hwy 35 Corridor
Ootsa Lake
Bulkley Lake
Cheslatta Lake
Haney Lake
Tetachuk Lake
Red Hills
Boer Mtn - Star Lakes
Chabourous Lake
Getzuni Lake
Day/Elwin Lakes
Isaac Lake
Helene Lake
Hannay Lake
Uncha Lake
Pinkut Lake
Maxan Lake
Taltapin Lake
New Bird Lake
Ootsa/Babine Corr'r
Conrad Lake
Takysie Lake
Klaytahnkut Lake
Fleming Lake
Mackenzie Lake
Uduk Lake
Sather Lake
Binta Lake
Entiako Lake/River
Gullwing Lake
Guyishton Lake
Ootsanee Lake
Ligityuz Lake
Lund Lake
Wasp Lake
Henrietta Lake

APPENDIX 6

Protected Areas

While Protected Areas are only one component of land use planning, they are an important feature of this LRMP. The selection and designation of protected areas is guided by the provincial Protected Areas Strategy (PAS). The PAS has two goals:

> **Goal 1 - Ecosystem Representation:** To protect viable examples of the natural diversity of the province, representative of the major terrestrial, marine and freshwater ecosystems, the characteristic habitats, hydrology and landforms, and the characteristic backcountry recreational and cultural heritage values of each ecosection.
>
> **Goal 2 - Special Features Protection:** To protect the special natural, cultural heritage and recreational features of the province, including rare and endangered species and critical habitats, outstanding or unique botanical, zoological, geological and paleontological features, outstanding or fragile cultural heritage features, and outstanding outdoor recreational features.

The Regional Protected Areas Team provided a list of Goal 1 and Goal 2 areas for the Resource Council to consider for protection. On that list were three Goal 1 areas and 9 Goal 2 areas. Of those, all three of the Goal 1 areas and seven of the nine Goal 2 areas are recommended for protection by the resource council. Many of the Goal 2 sites are in very close proximity to the Goal 1 sites. As a result, the boundaries selected by the resource council around the Goal 1 areas often encompass one or more Goal 2 areas (e.g., the Sutherland Proposed Protection Area totaling 12,900 ha includes the Sutherland River Goal 2 sites and the Babine Lake ERP #378).

The following table lists all of the Goal 1 and Goal 2 areas which the resource council considered. The top three rows are the two Goal 2 areas and the one Goal 1 area which were not recommended for protection but were recommended for Special Management. They do not contribute to district or provincial totals as they are not being recommended for protection. Where applicable, the table also indicates the contribution these areas make to the provincial Protected Areas Strategy.

Table [illegible] New Protected Areas Summary (Goal 1 and 2)

Name	Goal	Priority Protection Values	Comment	Approx. Area (ha)	Area as Percent of...			Contribution to PAS Ecosection Representation				
					Plan	TSA	THL	KIR	BUB	NAU	BAU	NEU
Natalkuz Lake (Chelaslie Arm) ERP[19] #379	*2*	*Biologically Exceptional*	*Not recommended for protection. Recommended for Special Management Low threat -- THLB[20] exclusion.*	--	--	--	--	--	--	--	--	--
Old Man Lake/China Nose	*2*	*Rare Species, Biologically Exceptional, Recreation*	*Not recommended for protection. Recommended for Special Management Low threat -- THLB exclusion.*	--	--	--	--	--	--	--	--	--
Cheslatta	*1*	*Biologically Exceptional, recreation and Cultural Heritage Values*	*Not recommended for protection. Recommended for Special Management.*									
Entiako	1	Ecosection Representation, Caribou Winter Range		70,400	4.9%	6.9%	6.8%	--	0.8%	2.8%	--	0.4%
Sutherland	1	Ecosection Representation, Grizzly, Ungulate & Fisheries Habitat, Special Habitats	Contains Goal 2 areas	12,900	0.9%	1.3%	0.8%	--	--	--	1.2%	--
Uncha Mountain/Red Hills	1	Ecosection Representation, Special Habitats, Recreation & Scenic Areas	Contains Goal 2 areas	8,800	0.6%	0.9%	0.5%	--	0.6%	--	--	--
Babine Lake Sites	2	Recreation, Cultural Heritage	Several small sites identified in figure 11	80	0.008	0.005	0.01	--	--	--	X	--
Burns Lake UREP 8555 (DL 2454)	2	Recreation Values	For campground development	62	0.004	0.006	0.009					
Babine Lake ERP #378	2	Rare Species, Biologically Exceptional	Contained within Sutherland PPA. Recommended for designation as Ecological Reserve					--	--	--	X	--
Francois Lake – Juniper Scrub	2	Rare species, Biologically Exceptional, Recreation	Contained within Uncha/Red Hills PPA					--	X	--	--	--
Red Hills	2	Remnant Ecosystem, Recreation	Contained within Uncha/Red Hills PPA					--	X	--	--	--

---

[19] ERP = Ecological Reserve Proposal

[20] THLB = Timber Harvesting Landbase

Table 1 New Protected Areas Summary (Goal 1 and 2)

Name	Goal	Priority Protection Values	Comment	Approx. Area (ha)	Area as Percent of...			Contribution to PAS Ecosection Representation				
					Plan	TSA	THL	KIR	BUB	NAU	BAU	NEU
Sutherland River Sites	2	Rare Ecosystem, Biologically Exceptional, Recreation	Contained within Sutherland PPA					--	--	--	X	--
Uncha Mountain	2	Remnant Ecosystem, Biologically Exceptional, Recreation	Contained within Uncha/Red Hills PPA					--	X	--	--	--
			District Total	92,242	6.4%	9.1%	8.1%		1.4%	2.8%	1.2%	0.4%
							Provincial Total	15.0%	2.9%	11.9%	10.6%	56.7%

**** All percentages calculated based on areas net of water:***

- *Planning Area (net of water): 1,424,000ha*
- *Timber Supply Area (net of water): 1,007,000ha*
- *Timber Harvesting Landbase (net of water): 663,000ha*

  NOTE: % of THL calculation is based upon number of hectares of THL falling within a proposed protected area, divided by total area of THL

***** PAS = provincial Protected Areas Strategy initiative***

- *KIR = Kitimat Ranges Ecosection*
- *BUB = Bulkley Basin Ecosection*
- *NAU = Nazko Upland Ecosection*
- *BAU = Babine Upland Ecosection*
- *NEU = Nechako Upland Ecosection*

APPENDIX 7

Resource and Recreation Use Guidelines for Protected Areas[21]

In June 1993, the Government of British Columbia released *A Protected Areas Strategy for British Columbia - the protected areas component of BC's land use strategy*. This policy sets forth a vision for a comprehensive protected areas system in British Columbia and a set of policies related to system goals, definitions and criteria to meet this vision; sets forth a process and associated guidelines for identifying candidate protected areas; defines linkages to land use planning processes; addresses transitional issues such as existing land and resource use tenures and the compatibility of some existing designations with the definition of protected areas; and commits the government to increase the percentage of the provincial land base dedicated to protected areas from 6% to 12% by the year 2000.

The Protected Areas Strategy identifies the broad framework within which protected areas will be examined and protected. It does not, however, explicitly address resource use issues or the appropriateness of a variety of recreation and tourism activities and services within protected areas, causing uncertainty among resource users and others participating in land use processes or potentially impacted by the designation of new protected areas.

The management of protected areas differs markedly from that of other lands and waters. The maintenance of ecological integrity, consistent with supporting recreational and cultural experiences where and when appropriate, will be the primary factor in management decisions while respecting government's land use plan commitments.

The protected areas management principles are intended to provide overall management guidance and to serve as a decision-support framework for determining appropriate uses in protected areas. The principles and accompanying policies on allowable activities within protected areas should be viewed as guidelines rather than absolutes. They are intended to provide the necessary flexibility to respond to practical realities, incorporate Cabinet directions stemming from earlier land use decisions and provide increased certainty respecting the long-term management of protected areas.

---

[21] This appendix is a reproduction of the document: *Resource and Recreation Use Guidelines for Protected Areas*, (Province of British Columbia, August, 1995)

Protected Areas Management Principles

The protected areas system comprises a family of protected areas. The system, rather than individual areas, provides for the diversity of ecosystems, special features and outdoor recreation opportunities and experiences sought. As such, not all allowed uses are appropriate within every protected area.

An allowed activity may not be appropriate within all areas of a protected area. Individual protected areas may be zoned to provide optimum protection to protected area values. Zones within protected areas should range from areas which exclude public access in order to protect fragile and vulnerable ecosystems and sensitive, rare and endangered species, to zones which accommodate and/or enhance recreational and cultural opportunities and experiences.

Protected areas are established in perpetuity so that the ecological systems they encompass can continue to evolve with the minimum of intervention. Active management /habitat manipulation may be allowed when the structure or formation of ecosystems is seriously altered and manipulation is the only possible or best alternative available to restore ecological integrity.

Use of protected areas will be encouraged, where appropriate and consistent with the principle of maintaining ecological integrity, in order to realize the spiritual, recreational, educational, cultural, tourism and health benefits that protected areas can provide. Allowable activities and uses should draw their meaning from association with and direct relation to the natural and cultural resource of the protected area. All uses of protected areas must be assessed in regard to their impact on the ecological systems and the key natural, cultural and recreational values of particular areas.

Land use activities and traditional cultural sues that have changed a landscape and have acquired significance in their own right, may be recognized and respected.

The Protected Areas Strategy respects the treaty rights and Aboriginal rights and interests that exist in British Columbia. Aboriginal peoples may use protected areas for sustenance activities and traditional ceremonial and spiritual practices, subject to conservation objectives

Developments within protected areas should be fully compatible with the principles of maintaining ecological integrity and minimum intervention with natural processes. Developments should directly complement and be integral to the opportunities being provided and complement the purpose, objectives and role of the particular protected area. Wherever possible, intensive recreational and tourism developments should occur in adjacent areas outside of protected area boundaries.

Recognition and special consideration will be given to existing tenures, licenses, authorizations and public use where uses are compatible with the objectives for which the area was established. Uses which have been approved for continuation in protected areas will be fully respected.

Protected areas are not islands ;they exist as part of larger ecosystems ad cultural landscapes. Therefore, management decisions, both inside and outside of protected areas, should be coordinated and integrated to the greatest extent possible while recognizing that resource development activities outside of protected areas are appropriate and necessary.

Protected areas are a public trust and opportunities for the public to provide input into the planning and management of the protected areas system and individual protected areas must not be abridged. Planning and management should be done in partnership with key public stakeholders and government resource agencies.

Protected area management plans will be established through an open public process.

COMPATIBILITY OF SELECTED ACTIVITIES, SERVICES AND USE IN PROTECTED AREAS

ACTIVITY/USE/FACILITY	ALLOWED/NOT ALLOWED	COMMENTS
Logging	Not Allowed	As Approved by Cabinet (PAS)
Mining	Not Allowed	As Approved by Cabinet (PAS)
Hydroelectric Development	Not Allowed	As Approved by Cabinet (PAS)
Grazing	Allowed Subject to the Management Plan	As Approved by Cabinet. Existing Tenures are Normally Replaceable and Transferable. No New Tenures to be Issued Except for Expressed Management Purposes as Defined by a Protected Area Management Plan
Hunting	Allowed Subject to the Management Plan	
Fishing	Allowed Subject to the Management Plan	
Fish Stocking and Enhancement	Allowed Subject to the Management Plan	The Use of Species or Stocks not Native to the Watershed will not be Allowed.
Trapping	Not Allowed/Existing Tenures Grandparented	May be Permitted for Expressed Management Purposes as Defined by Protected Area Management Plan. Existing Tenures are Normally Renewable and Transferable.
Horse Use	Allowed Subject to the Management Plan	Limited to Designated Zones and/or Trails.
Pack Animal Use	Allowed Subject to the Management Plan	Limited to Designated Zones and/or Trails.
Water Control Structures	Allowed Subject to the Management Plan	Only in Intensive Recreation Zones to Enhance Recreational Opportunities or for Expressed Management Purposes as Defined by Management Plan. Infrastructure Existing at the Time of Area Establishment Normally Allowed to Remain.
Powerline/Transmission Line and Other Rights-of-Ways	Not Allowed	Allowed if there are no Practical and Feasible Alternatives. If Present at Time of Area Establishment, Normally Allowed to Continue.

ACTIVITY/USE/FACILITY	ALLOWED/NOT ALLOWED	COMMENTS
Communication Sites	Not Allowed	Allowed for Essential Protected Area Management Communication Needs or if there are not Practical or Feasible Alternatives. If Present at Time of Area Establishment, Normally Allowed to Continue.
Commercial Guiding - Hunting - Fishing - Nature Tours - River Rafting	Allowed Subject to the Management Plan.	Permits from Managing Agency will be Required.
Commercial Oyster and Marine Plant Harvesting	Not Allowed/Existing Licensees Grandparented	Existing Licenses are Normally Renewable and Transferable.
Recreational Shellfish and Marine Plant Harvesting	Allowed Subject to the Management Plan	
Finfish, Shellfish and Marine Plant Farming	Not Allowed/Existing Licenses Grandparented	Existing Licenses are Normally Renewable and Transferable.
Commercial Fishing		
- Non-Tidal Waters	Not Allowed	
- Marine Waters	Not Allowed	Subject to Agreement by DFO
Tourism-Related Infrastructure		
- Resorts	Not Allowed	As Approved by Cabinet (PAS). Facilities Existing at Time of Area Establishment Allowed to Remain.
- Lodges/Cabins - Guest Ranches - Backcountry Huts	Allowed Subject to the Management Plan	
Marinas	Not Allowed	Infrastructure Existing at the Time of Area Establishment Allowed to Remain.
Roads Within Protected Areas	Allowed Subject to the Management Plan	New Road Developments Must be Identified in Management Plans.
Off-Road Activities		
- Snowmobiling	Allowed Subject to the Management Plan	Limited to Designated Zones and/or Trails.
- Motorized Activities (Vehicles with Motors)	Not Allowed	
- Mechanical Activities (Vehicles which are not Motorized, e.g., Mountain Bikes)	Allowed Subject to the Management Plan	Limited to Designated Zones and/or Trails
Water: Motorized Activities	Allowed Subject to the Management Plan	

ACTIVITY/USE/FACILITY	ALLOWED/NOT ALLOWED	COMMENTS
Aircraft Access	Allowed Subject to the Management Plan	For Destination Access Purposes Only (i.e., Drop Visitors Off)
Heli-Skiing	Allowed Subject to the Management Plan	
Heli-Hiking	Allowed Subject to the Management Plan	
Cat-Assisted Skiing	Allowed Subject to the Management Plan	
Fire Management		
- Wildfire Management	Allowed Subject to the Management Plan	Wildfires are a Naturally Occurring Ecological Process. Policy Recognizes Need to Protect Public Safety/Facilities, Values on Adjacent Lands, etc.
- Prescribed Fire	Allowed Subject to the Management Plan	Only for Expressed Management Purposes as Defined by a Protected Area Management Plan.
- Prevention and Preparedness	Allowed Subject to the Management Plan	
Insect/Disease Control	Allowed Subject to the Management Plan	Indigenous Insect/Disease Outbreaks are Naturally Occurring Phenomena. Policy Recognizes the Need to Prevent Unacceptable Damage to Values on Adjacent Lands, Prevent Damage to Significant Recreation Features or Values, etc. Commercial Logging to Remove Infected Trees may be Allowed.
Exotic Organisms Control	Allowed Subject to the Management Plan	
Scientific Research	Allowed Subject to the Management Plan	Manipulative Activities Normally not Allowed. Specimen Collections only Allowed if Results in Information Providing Increased Scientific Knowledge (e.g., Geology, Forestry, etc.) or Protection and/or Understanding of Protected Area Values. Permits from Managing Agency will be Required.
Ecosystem and Habitat Restoration	Allowed Subject to the Management Plan	

APPENDIX 8

Recommended Terms of Reference for the Lakes District Monitoring Committee

The following document prepared by the resource council is a recommended Terms of References for the Lakes District Monitoring Committee.

Introduction

The Lakes LRMP will be implemented through government agencies. The Prince Rupert Interagency Management Committee (IAMC) will oversee the monitoring efforts, and will produce an annual report to be reviewed and commented on by the Monitoring Committee.

Representatives of the public, together with representatives of government, will sit on the Monitoring Committee. The Monitoring Committee will report on the status of LRMP implementation to the public, and make recommendations to government concerning the Plan, including any suggested plan amendments.

Purpose of the Monitoring Committee

The Monitoring Committee will:

- determine the extent to which the management strategies in the LRMP are being, or have been implemented,
- evaluate the degree to which management strategies have been effective in achieving the particular stated objectives,
- test, on an ongoing basis, the assumptions which have underlain LRMP objectives,
- monitor local level strategic plans for consistency with LRMP direction, and,
- report to the IAMC and the broader public the results of their efforts, based principally on a review of the annual monitoring report of the IAMC; in such reports, the Monitoring Committee may propose amendments to the LRMP.

Membership

The Monitoring Committee will comprise government and public representatives. Four government staff will be appointed to the committee by the IAMC and shall include representatives of the Ministry of Forests and Ministry of Environment, Lands and Parks.

Six public representatives shall be appointed by the IAMC, initially in consultation with the Lakes District Resource Council. The range of interests expressed at Resource Council meetings shall be the primary basis for selection but the members shall include those competent to represent concerns and values from the environment, wildlife, forestry, recreation, agriculture and other sectors as necessary.

Roles and Responsibilities

Government staff will provide technical advice and interpretation based on their respective agency mandate and personal technical competencies.

Public representatives will provide their concerns and values, based on both their personal experience and knowledge, and on the desires and concerns expressed within their sector and in the broader community as they relate to particular issues. To accomplish the latter effectively, public representatives will devise and implement the means by which they monitor the views of their sectoral and broader community constituents and will review these means with the Committee.

The members of the Committee will select a chairperson to call and conduct the meetings.

Decision Making

The Monitoring Committee will strive to make consensus recommendations. In the event that consensus cannot be reached, the various options under consideration shall be presented.

Meeting Frequency

The Monitoring Committee shall meet at least annually.

Representations and Presentations

Membership in the Monitoring Committee shall be publicly announced and interested parties encouraged to bring issues of concern to individual members. Should circumstances warrant, provision may be made for presentations from interested parties to the Monitoring Committee.

Term

Initially, members of the Monitoring Committee shall be appointed for two or three year terms with half of the government and half of the public representatives being appointed for two years. Thereafter, all members will be appointed for three year terms.

Authority

The Monitoring Committee is Advisory in nature. The recommendations of the Committee will be addressed by the Prince Rupert IAMC. The Prince Rupert IAMC will respond to the Monitoring Committee's reports and indicate the decisions taken related to the recommendations of the Monitoring Committee.

Support

The Monitoring Committee will be supported through the Prince Rupert IAMC. Support includes, for example, the provision of meeting space, the distribution of materials, the production of reports and the provision of conference call facilities.

APPENDIX 9

Landscape Unit Boundary, Biodiversity Emphasis, and Planning Priority Recommendations (RLUPs excerpt)

Landscape Unit	Tot. area (ha)[1]	HLB (ha)[2]	% HLB	BIODIVERSITY EMPHASIS ASSIGNMENT	LANDSCAPE UNIT PLANNING PRIORITIES
Babine East	46998	19548	3.4	INTERMEDIATE	4
Babine West	64136	40469	7.0	LOW	13
Bulkely	75832	47729	8.3	INTERMEDIATE	1
Burns Lake East	91580	61446	10.6	LOW	10
Burns Lake West	69386	39666	6.9	LOW	11
Chelaslie	100363	54822	9.5	HIGH	2
Cheslatta	112500	71752	12.4	INTERMEDIATE	3
Fleming	55621	29228	5.1	INTERMEDIATE	8
Francois. East	79698	46726	8.1	LOW	9
Francois. West	80818	45964	8.0	INTERMEDIATE	5
Intata	49539	39009	6.8	INTERMEDIATE	7
Ootsa	38308	23689	4.1	INTERMEDIATE	6
Taltapin	72697	57652	10.0	LOW	12
	937476	577701	100.0		
Entiako	70994	0			
	1008470	577701			

LAKES BIODIVERSITY EMPHASIS BREAKDOWN

	HLB (ha)[2]	HLB %
%HIGH	54822	9.5
%INTERM	276920	47.9
%LOW	245959	42.6
	577701	100

LAKES DISTRICT BEO TARGET RANGE BASED ON FOREST PRACTICES CODE RECOMMENDATIONS

	RANGE		BOTTOM (ha HLB)	TOP (ha HLB)
%HIGH	10	10	57,770	57,770
%INTERM	35	60	202,195	346,621
%LOW	30	55	173,310	317,736

---

[1] Total land area (gross area less lakes and double line water features) taken from Lakes District 1995 Pamap GIS file

[2] Harvesting Land Base (HLB) hectare figures taken from Lakes District 1993 Pamap GIS file and contained in LRMP file LUZON1.xls

APPENDIX 10

Consensus Policy Recommendations

The following is a list of consensus recommendations from the resource council to government. In general, these recommendations result from resource council discussion of issues which, while either beyond the scope of LRMP planning or not easily expressed in zoning or management provisions are recognized as important to resource management and/or land-use zoning. The following issues and proposed actions are presented for consideration.

1. The limitations inherent in the current framework for management of forest health within provincial parks raises serious local concerns about the ability to protect from mountain pine beetle infestation those timber resource values adjacent to park boundaries. Consistent with the preservation of the key values underlying park creation, the Lakes District LRMP recommends that government strive to address this concern through development of an improved framework for management of forest health within parks, focusing on the following key provisions:

   - early detection and treatment,
   - interagency co-operation and action, and
   - adequate, secure funding for implementation.

   While it is recognized that forest health management strategies for parks must be developed on a case by case basis to reflect the unique characteristics of each area, the Lakes District LRMP suggests that the basis for an appropriate management framework may be found in Appendix 4, *Interim Forest Health Management Strategy for Proposed Protected Areas*, of this plan.

2. In order to provide a greater degree of certainty for agricultural lease applicants, it is recommended that a detailed inventory be produced which attempts to identify lands both suitable for agricultural development and having potential for low conflict with wildlife and forestry resource values. The inventory should identify:

   - key habitats and biodiversity values;
   - suitable arable soils;
   - site productivity, existing investment and long-term area-based tenures for forestry.

   This inventory would be intended to assist in determining land use suitability and to provide a level of detail appropriate to the development of site level management options which address potential land use conflicts. The areas to be inventoried would be defined in detail through the inventory process and should include potential agriculture/wildlife/forestry conflict lands both within and outside of the agriculture/settlement zone.

3. It is recommended that the value-added wood manufacturing sector be supported through a variety of initiatives, such as improvements to the Small Business Bid Proposal sale criteria, continuation of the pilot small scale salvage program in the Lakes Forest District, and adoption of a value-added credit system.

4. It is recommended that the policy guidelines of BC Lands relating to land use for agriculture will be reviewed with a view to ensuring appropriate agricultural opportunities result. Criteria should be established for:
    - defining agricultural land suitability (i.e., eligibility, arability)
    - conservation and mitigation strategies
    - referral process and approval mechanisms
    - multi-agency involvement in development plans

5. It is recommended that reasonable opportunities be provided for public and stakeholder involvement in Landscape Unit planning in order to ensure that the spirit and intent of the LRMP, as well as local level community-based concerns, are reflected in landscape unit objectives, strategies and design.

6. It is recommend that hunting regulations for the East Ootsa South / Chelaslie area that existed prior to 1989, and which prevented motorized hunting beyond 0.25 miles (approximately 500 metres) of a lakeshore, be reintroduced.

7. It is recommended that when considering additional areas for protection within the planning area, Park's consider existing land reserves which have been identified for conservation purposes (i.e., UREP reserves). Typically, these are areas of modest size which reflect public concern for unique natural heritage, cultural heritage, and/or recreation features which may warrant either preservation or enhanced recreation management.

8. Upon establishment of new protected areas as parks, it is recommended there be no imposition of incremental fees on existing tenure holders and/or that permitting agencies co-operate in developing a single fee structure to be delivered by a single permitting agency

APPENDIX 11

Socio-Economic/Environmental Assessment Summary Tables

SOCIO-ECONOMIC EVALUATION SUMMARY

Key Accounts	**Base Case Trends** **Incl. Timber Supply Review (TSR) & Forest Practices Code (FPC)**	**Scenario "O"** **(Consensus as of June 1997) vs. Base Case**
ECONOMIC DEVELOPMENT SUMMARY	• Continued slow population & economic growth due to stable (165 yrs.) timber harvest level • Continued growth in tourism & service sector, higher value forestry activities & First Nations investment. • Continued increase is % of workforce in service-sector, resulting in some decline in average incomes.	• 55-85 jobs (2.4%-3.4% of District employment) at risk after 30-40 yrs. due to timber supply impacts • Scenario somewhat more supportive of wilderness tourism & other nature-based livelihoods. • Otherwise similar to Base Case.
SECTOR SUMMARY		
Forestry	• Current harvest level of 1.5 million m3/yr. sustainable for 165 yrs. (estimated harvest of 1.77 million would be supportable in the absence of Forest Practices Code and harvesting constraints related to Caribou management) • Log salvage, improved utilization, labour intensive harvesting, Forest Renewal BC, growth in value-added, should offset industry rationalization job impacts.	• Harvest reduction from 1.5 million m3/yr. of 100,000 m3 / yr & 40-55 direct jobs at risk ***in 30-40 years***, due to Protected Areas (PAs) & Special Management Zones (SMZs) • Negligible risk of permanent mill closure due to timber impacts. • Otherwise similar to Base Case, and will continue as dominant industry in the area.
Tourism / Recreation	• Continued growth in fishing lodges / back-country tourism in the foreseeable future, but long term potential would be diminished in the Timber Supply Area by increased road access & harvesting pressure on fish / wildlife populations. • Tweedsmuir Park, one of the largest parks in BC would still preserve some wilderness tourism opportunities.	• 97% of the area around back-country lakes & 83% of high value recreation sites in new Protected Areas & Special Management Zones; more encouraging for investment in wilderness tourism. • Stricter access controls would reduce pressure on fish / wildlife. • Relaxed visual quality controls could reduce protection for scenic values.

SOCIO-ECONOMIC EVALUATION SUMMARY

Key Accounts	Base Case Trends	Scenario "O"
Commercial Fisheries / Trapping / Botanical Forest Products	• Increasing risk to salmon habitat & old growth dependent furbearers with continued timber access. • Botanical forest products (e.g. mushrooms) opportunities may be lost without more intensive management.	• Higher % of undeveloped watersheds in new Protected Areas & more stringent access restrictions will slow decline in furbearer habitat. • Increased protection of old growth is positive for botanical forest products potential
Agriculture / Range	• 13% of Agricultural Land Reserve in Special Management and 56% in Agriculture/Settlement Zones. • Forest Practices Code limits grazing, but significant underutilized agricultural land for forage crop / ranching growth. • Market factors / historical trends suggest slow growth.	• 5% of existing range tenures & 8% of range potential in new Protected Areas. Existing tenures would be allowed to continue, subject to Protected Area management goals. • 18% of Agricultural Land Reserve in SMZs but 80% in Agriculture / Settlement Zone. • Growth trend similar to Base Case.
Mining / Energy	• No operating or proposed mines but some promising developed prospects ("Lindquist" in Tweedsmuir Rec Area & ““Mac" in north part of plan area). • Government considering options for resolution of mining/caribou conflicts in Tweedsmuir Rec Area. • Unpredictable cycles in world markets & hidden nature of the resource imply timing/probability of new mines is difficult to forecast.	• 0.8% of current metallic exploration areas & 14% of high metallic potential areas precluded by new PAs. • Mac deposit (could create 150 jobs) in new Special Management Zone which could increase costs of development. • Tweedsmuir Rec Area issue would be resolved as in the Base Case. • Outlook similar to Base Case.
COMMUNITY STABILITY / QUALITY OF LIFE	• Population likely to continue growing slowly. • Forest Renewal BC & gradual diversification of the forestry sector & economy may dampen disruptions. • Land claims resolution could stimulate economic development but potential impacts on 3rd parties. • Forest Practices Code would better protect fish / wildlife & recreation values, but still erosion in these values in long term.	• Consensus among key stakeholder groups on land use plan could enhance investor certainty. • Scenario somewhat more supportive of key outdoor recreation features & opportunities than the Base Case, although still some erosion of these values in long term. • Otherwise similar to Base Case.

SOCIO-ECONOMIC EVALUATION SUMMARY

Key Accounts	Base Case Trends	Scenario "O"
FIRST NATIONS ISSUES	• High dependency on social assistance; somewhat less after claims settled. • Concerns re impacts of continued timber harvesting on cultural/heritage sites & fish wildlife resources. • Resolution of land claims would likely provide larger resource base, funding for investment / training, & more input into resource management.	• Scenario could place some First Nations forestry jobs at risk, but because impacts are prorated among licenses, effects would be minor. • Scenario provides somewhat better protection for cultural / heritage resources, fish & wildlife and wilderness tourism opportunities, but would still be some erosion in these opportunities over time
GOVERNMENT REVENUE		
Local	• Slow increase / diversification in tax base due to increase in population & economic growth. • FRBC could result in region getting greater share of timber revenues.	• Scenario would not result in any permanent mill closures; would be somewhat more supportive of tourism component of tax base. • Otherwise similar to Base Case.
Provincial	• Stable revenues from timber but possible long term decline in resource revenues due to higher harvesting costs associated with Forest Practices Code & land claims settlements. • Increase in revenues from tourism.	• Scenario would result in potential loss of up to $5 million / yr in forestry-related revenues, but would be somewhat more supportive of tourism component of tax base. • Otherwise similar to Base Case.

ENVIRONMENTAL EVALUATION SUMMARY

Key Accounts	Base Case Trends	Scenario "O"
Ecosystem Representation / Protected Areas	• Tweedsmuir Park & Recreation Area account for virtually all of existing protected areas within the plan area (29% of Forest District). • Tweedsmuir provides adequate representation in 2 of 5 ecosections and 6 of 10 subzone variants. • No large existing protected areas in Lakes Timber Supply Area (TSA). • Bulkley Basin ecosection significantly under represented. • SBSdk (Sub-Boreal-Spruce, dry-cool) and SBPSmc (Sub-Boreal-Pine-Spruce, moist-cool) biogeoclimatic subzone variants	• Significant increase in Timber Supply Area allocated to new Protected Areas (9.2%, net of water); total existing and proposed protected areas total 36% of Forest District. • 3 proposed parks provide increased representation in all 4 ecosections including the Bulkley Basin. • Tweedsmuir & new Protected Areas provide representation in all 5 ecosections & 9 of 10 subzone variants. • Significant increased

ENVIRONMENTAL EVALUATION SUMMARY

Key Accounts	Base Case Trends	Scenario "O"
	under represented.	representation of the SBSdk (Sutherland R. and Uncha) and SBPSmc subzones (Entiako).
Biodiversity	• 63% of Timber Harvesting Land Base (THLB) allocated to General Resource (i.e. Integrated Resource) Management Zones; remainder to Special Management • Species dependent on large contiguous areas of old growth anticipated to decline as mature and old forests are harvested over time (50-100 years). • Moderate-high risk of fragmentation in General zones. Landscape-level planning and recommendations (patch size, distribution, connectivity) outlined in *Biodiversity Guidebook* may mitigate impacts.	• 57% of Timber Harvesting Land Base allocated to General (33%) and Intensive Timber Zones (24%). • Slight reduction in risk to some components of biodiversity due to less area managed as General/ Intensive, & *Management Strategies* that provide explicit direction to maintain Forest Ecosystem Networks ('Strong Links') during lower level planning processes. • Otherwise, similar to Base Case.
Habitat Linkages	• Implementation of Forest Practices Code *Riparian Management* and *Lakeshore Management Reserve Zones* will provide adequate protection for "strong links; " upland riparian and "soft links" remain vulnerable.	• Explicit direction to lower level plans to manage riparian corridors ('Strong Links') as Forest Ecosystem Networks reduces risks and provides more certainty that habitat linkages and riparian landscape connectivity will be maintained.
Riparian Wetlands	• 94% of the large riparian complexes in Special Management Zones. • Reduced impact anticipated with TSR management guidelines as well as FPC *Riparian Management* and *Lakeshore Management Reserve Zones*. However, due to discretionary management practices in the *Riparian Management Zones*, moderate levels of risk remain for species and ecosystem processes dependent on riparian habitat attributes.	• 72% of large riparian wetlands in Special Management; additional 15.6% in Protected Areas. • *Management Strategies* provide direction for ecosystem connectivity through the application of Forest Ecosystem Networks ('Strong Links'). • Risks to riparian habitats, reduced largely due to increase in Protected Areas and *Management Strategies* that provide direction to lower level planning processes.
Woodland Caribou (*Tweedsmuir-Entiako Herd*)	• Timber harvesting activities anticipated to eventually occur in all caribou migration corridor zones. Increased risks to caribou	• Significantly reduced risks to Entiako caribou herd due to: ⇒ 100% of caribou migration corridor (very high, high and

ENVIRONMENTAL EVALUATION SUMMARY

Key Accounts	Base Case Trends	Scenario "O"
	population due to future road development (access) and altered predator-prey relationships. • Core winter range (Entiako Lake) assumed protected (i.e., no-harvest zone). 65% of winter range lies within the current Timber Harvesting Land Base. • Special management anticipated along south shores of Tetachuk Lake. Value of core winter range compromised due to new road access in surrounding areas; increased risks to caribou & moderate potential for decline. • Overall, future resource development in the caribou migration corridor and winter range significantly increases the risks to caribou. Although the relatively low levels of activity anticipated in these areas minimizes the impact, the long term viability of the Tweedsmuir-Entiako caribou herd remains vulnerable.	moderate use subzones) in Special Management Zones ⇒ LRMP *Management Strategies* (i.e., Chelaslie Caribou Migration Corridor Management Strategy) further reduce potential risks; overall, risk considered low. ⇒ Enhanced protection for caribou winter range: 100 % of winter range allocated to new Protected Area (Entiako) • However, calving habitat in Tweedsmuir Rec area remains at risk due to potential future mineral development, pending decision to be made by government.
Moose Winter Range	• 36% of high value moose winter range in General Zones. Moderate potential for decline in long term due to increased access and loss of mature forest cover. • Management guidelines outlined in Timber Supply Review expected to mitigate potential impacts on moose winter ranges. • Overall, moderate-low risk.	• Proposed Plan suggests both positive and negative implications due to: ⇒ greater percentage (41%) of moose winter range to allocated to Special Management; overall, riparian moose habitats expected to be maintained ⇒ however, increased risks to 19% of high capability moose winter range due to Agriculture/Settlement Zone. High potential for local declines due to loss of mature forest cover and native browse. ⇒ LRMP *Objectives & Strategies* (i.e., strategies 4.2-4.6; 5.1-5.4 designed to incorporate wildlife concerns in the Agriculture / Settlement Zones may partly

Key Accounts	Base Case Trends	Scenario "O"
		mitigate long term impacts.
Deer Winter Range	• Half of high capability deer winter range on private settlement land. Past practices and future development limits mature forest cover over the long term in these areas. • Deer winter range occurring in Special Management Zones expected to be maintained; however, mature forest cover anticipated to become limiting in General Zones over the long term. • Overall, low risk on Crown land; however, deer winter range on private land remains vulnerable.	• 51% in Agriculture / Settlement; 5.9 % in Protected Area due to Uncha proposed park. • *Management Objectives & Strategies* outlined by Lakes District LRMP (i.e., strategies 4.2-4.6; 5.1-5.4) designed to incorporate wildlife concerns in the Agriculture/Settlement zones may partly mitigate potential long term impacts.
Mountain Goat	• 76% of mountain goat winter range in General Resource Management Zones. • Increased access into Upper Tildesley increases risk to small mountain goat population. Access management strategies and Limited Entry Hunting regulations partly mitigate potential negative impacts.	• Enhanced protection for mountain goat winter range. • 86% in Special Management; 13% in Protected Areas. • *Management Objectives & Strategies* outlined by Lakes District LRMP (e.g., establishment of *Wildlife Habitat Areas* in upper Tildesley) reduce risks to mountain goat winter range by providing direction to lower level planning processes.
Grizzly Bear	• Majority (80%) of high value grizzly bear habitat in Special Management Zones. • Seasonal grizzly bear habitats in Klaytahnkut and Sutherland Valley maintained in short-term (10 years); however, increased risks from road access over the long term. • Access management strategies may partly mitigate increased risks of bear-human conflicts. • Overall, lack of higher level planning objectives to maintain grizzly bear habitat over large areas increases risk to grizzly bear populations over the long term.	• 81% of high value grizzly bear habitat in Protected Areas • Protection of Sutherland R. Valley and LRMP *Management Objectives & Strategies* minimizes risks to seasonal habitat in that area, but General & Intensive Timber Zones immediately adjacent to proposed park do not provide desired buffer - eventual park master plan may partly mitigate. • Klaytahnkut Creek seasonal grizzly habitat remains Special Management as in Base Case, but General & Intensive Timber Zones adjacent to riparian areas

ENVIRONMENTAL EVALUATION SUMMARY

Key Accounts	Base Case Trends	Scenario "O"
		partly offset the benefits • Overall, Scenario reduces the risks to grizzly bears compared to the Base Case. Risks considered low-moderate
Red and Blue-listed Species	• Reduced impact on wading birds anticipated with Forest Practices Code *Riparian Management & Lakeshore Management Areas*. • Adherence to recommendations outlined in the *Managing Identified Wildlife Guidebook* will reduce risks to some red and blue-listed species. However, Higher Level Plan (HLP) species, (e.g. woodland caribou, grizzly bear, northern goshawk) remain vulnerable.	• Reduced risks to two key large mammal species (caribou, grizzly bears) that require management direction from *Higher Level Plan*. • General management direction to protect and conserve habitat for rare, threatened and endangered plant and animal species (e.g., establish *Wildlife Habitat Areas*) provides increased certainty red and blue listed species will be addressed during landscape unit planning.
Backcountry Lakes	• Wilderness values of back-country lakes expected to be maintained under current management. • Majority of back-country & fish bearing lakes in Special Management Zones; Forest Practices Code *Riparian Management & Regional Lakeshore Classification Guidebook* will reduce impacts to freshwater fish habitats.	• 10 of 10 back-country lakes in Special Management Zones. • LRMP *Management Objectives & Strategies* provide increased certainty wilderness values will be maintained around back-country lakes. • Otherwise, similar to Base Case.
Significant Fish Streams	• 55% of significant fish stream habitat in Special Management Zones • Forest Practices Code *Riparian Reserves* will significantly reduce habitat impacts. • However, moderate risks remain due to General Management Zone allocation and fish streams present on private land.	• 61% of significant fish stream habitat in Special Management Zones; 9% in Protected Areas. • Management strategies to develop a *Strategic Fisheries Plan*, including identification and establishment of *Wildlife Habitat Areas* for sensitive fish habitats reduce risks to fisheries habitat over the long term. • Overall, the additional area in Special Management & Protected Areas, with *Management Objectives and Strategies*, reduce risks to low.
Salmon Spawning	• 40% of habitat in Special Management Zones.	• 37% of habitat in Special Management & 12% in

ENVIRONMENTAL EVALUATION SUMMARY

Key Accounts	Base Case Trends	Scenario "O"
Habitat	• Future road and resource development may negatively impact fish habitat. • FPC *Riparian Management Areas* will reduce impacts on Crown land. • However, the 20% of salmon spawning habitat on private land remains at risk.	Protected Areas. Potential benefits of Protected Areas partly offset by having 14% of habitat in Agriculture Zone, along with 20% in Settlement Zone. • *Management Objectives & Strategies* outlined by Lakes District LRMP may mitigate potential negative impacts.
Water Quality	• Forest Practices Code riparian zones and watershed assessments will reduce impacts on water quality. • Water quality anticipated to be maintained.	• LRMP *Management Objectives & Strategies* provide increased certainty water management plans will be prepared in high conflict areas. • Otherwise, similar to Base Case.

APPENDIX 12

Major Issues Summary

The first invitation for comprehensive feedback on LRMP direction was circulation of a working document to the Resource Council and government in April 1997. This initial feedback was the basis for identification of major issues, or, those land and resource management concerns that would require intensive multi-stakeholder conflict resolution to arrive at mutually acceptable solutions. The major issues and proposed resolutions were attached to the first widely distributed draft of the LRMP (June 1997), which was reviewed by the Resource Council and various government representatives, as well as being circulated throughout the community. Comments from this review process were recorded and discussed at subsequent LRMP meetings. One outcome of these discussions was consensus resolution of 9 of the 10 major issues. These resolutions have been incorporated into the LRMP document. The Tweedsmuir Recreation Area issue (item 4 below) was referred to the Prince Rupert IAMC for resolution. Major issues and their resolutions are summarized below.

1. Existing Tenure in Proposed Protected Areas/Parks

ISSUE: Maintenance of existing tenure privileges in the event proposed protected areas are designated as parks. Specifically concerned with trapping, guiding and grazing tenures.

RESOLUTION: **Trapping** continues as an authorized, grandparented use - voluntary extinguishment of tenure only. **Guiding** continues and is subject to the park management plan - tenures are renewable and transferable. **Grazing** continues under the *Forest Act* and is subject to the park management plan and Cabinet approval - tenures are renewable and transferable. Range tenures in Uncha Mountain/Red Hills area are to be maintained.

2. First Nations' Land Use in Proposed Protected Areas/Parks

ISSUE: Impact of proposed protected areas on First Nations' traditional territory. Includes both resource conservation and traditional/non-traditional resource development values (i.e., trapping, backcountry tourism/recreation, cattle grazing and salvage logging).

RESOLUTION: **Conservation** concerns can be met under the *Park Act*. **Commercial** activity which may be accommodated in park areas includes trapping, backcountry tourism/ recreation, and cattle grazing. **LRMP direction** recommends First Nations' involvement in park planning and management. The province is working to address First Nations' concerns on an ongoing basis.

3. Mountain Pine Beetle (MPB) Management in Proposed Protected Areas/Parks

ISSUE: Effective management of Mountain Pine Beetle (MPB) within proposed protected areas both in interim and upon designation as provincial parks. Conservation of resource values both within (i.e., caribou winter range) and adjacent to (i.e., timber) proposed protected areas/parks.

RESOLUTION: **Uncha Mountain/Red Hills and Sutherland Valley** are small areas with relatively low MPB risk due to low occurrence of susceptible timber types. MPB is to be addressed in these areas within the constraints of the *Park Act* through a Ministry of Forests/Parks Branch management protocol. The **Entiako** is a large area with high occurrence of MPB susceptible timber types placing both caribou and adjacent timber at risk. LRMP recommends designation as a protected area under legislation enabling implementation of management options for the Entiako as outlined in Appendix 4, *Interim Mountain Pine Beetle Management Strategy for Proposed Protected Areas*. **Interim management** of MPB prior to park designation is based on Appendix 4. A **policy recommendation** suggests the province review the framework for MPB management within parks based on (1) early detection and treatment, (2) joint agency action (MOF and MELP), and (3) adequate/secure funding.

4. Caribou/Mineral Conflicts in the Tweedsmuir Recreation Area

ISSUE: Determination of appropriate land use for this area where very high values for both caribou habitat and mineral development overlap directly. Both the Resource Council and Government agencies were been unable to reach agreement on a management priority for the area due to overlapping high values. **Conservation** concerns include high recruitment calving habitat, high value grizzly habitat, regional protected areas connectivity, and high recreation/ scenic values. **Mineral potential** ranks within the top 8% in the province.

RESOLUTION: The Resource Council referred the decision to the Prince Rupert IAMC which made recommendations to Cabinet. Cabinet approved recommendations have been incorporated into the final document.

5. Management of Backcountry Lakes

ISSUE: Of the more than 1000 lakes in this district, most of significant size currently have road access. Due to the accessibility/operability of the local terrain, maintenance of backcountry attributes on some of the larger remaining unaccessed lakes requires clear management direction. Conservation management emphasis is proposed for 10 lakes within the district.

RESOLUTION: **Conservation** direction includes ecosystem and wildlife management, recreation and scenic management, restrictions on access, and limited development. **Development** direction focuses timber harvesting on forest health as a first priority. Forestry and mineral exploration and development will be managed to meet conservation objectives.

6. Management of Very High Use Areas in the Caribou Migration Corridor

ISSUE: The Chelaslie migration corridor is comprised of low, moderate, high and very high caribou use areas. The very high use areas function as staging and alternate winter range habitat and are highly sensitive to human activities. Limitations to both access and development are proposed for these areas.

RESOLUTION: **Conservation** direction includes emphasis on caribou habitat management, ecosystem management, restrictions on access, and limited development. **Development** direction focuses timber harvesting on forest health as a first priority. Forestry and mineral exploration and development will meet caribou habitat management objectives.

7. Short Term Timber Supply

ISSUE: Some concern exists that supplies of mature timber may be inadequate in the short term to meet current harvest levels. This is based on forest industry discomfort with the level of uncertainty surrounding the assessment of timber impacts associated with proposed LRMP management direction.

RESOLUTION: **Analysis** indicates that short term supplies are not expected to drop below current levels for at least 35 years - these are considered conservative estimates. Nonetheless, concerns around short term supply are actively addressed in the Plan. **Strategies** are proposed to verify the availability of mature timber over the short term (i.e., 20 year development planning), and to address any identified shortfall. In addition a second **Timber Supply Review** is scheduled to start in September 1997 for completion in mid-1999. This process will provide a more detailed assessment of supply over a 250 year planning horizon.

8. Biodiversity Management and Forest Ecosystem Networks (FEN)

ISSUE: Concern that LRMP management direction address biodiversity and landscape connectivity at a level of detail appropriate to strategic planning - i.e., not fettering on more detailed planning at the landscape unit level, where these principles of ecosystem management will be implemented.

RESOLUTION: **Strategic level** to provide direction on: (1) ecosystem/biodiversity management, (2) biodiversity emphasis options (BEOs), or, the ecological capital available at the landscape unit level, (3) the composition and management of landscape connectivity corridors, and (4) interim management. **Landscape Unit level** to determine (1) the appropriate mix/distribution of biodiversity management attributes (i.e., landscape connectivity corridors and seral stage distribution) based on landscape unit characteristics, and (2) design of Forest Ecosystem Networks.

9. Agriculture/Wildlife/Forestry Conflicts

ISSUE: Confusion as to what the resource management emphasis is within the agriculture/ settlement zone with respect to agriculture, wildlife, and forestry, and as to an appropriate strategy for conflict resolution.

RESOLUTION: **Emphasize agriculture over forestry** on arable land, taking existing forestry investments into account and carefully evaluating investments in future forest crops. **Integrate agriculture/wildlife concerns** by recognizing that agriculture is a socially and economically desirable use in this zone, and that a process needs to be developed to ensure opportunities for agricultural lease applicants while identifying and conserving key wildlife values. **LRMP direction** provides for a combination of (1) detailed inventory to identify and resolve agriculture/wildlife/forestry conflict areas, and (2) site-level strategies designed to minimize wildlife habitat impacts due to agricultural development.

10. Application and Inter-relationship of the ALR/FLR/PFR

ISSUE: That (1) the Agricultural Land Reserve (ALR) be incorporated into the Agriculture/ Settlement zone; and (2) the application of the Forest Land Reserve (FLR) does not unduly restrict availability of land for agricultural, settlement, and commercial development expansion outside of the Agriculture/Settlement zone.

RESOLUTION: Incorporation of the entire **ALR** into the Agriculture/Settlement zone for better 'fit' between government legislation/policy and the proposed zone. Proposal to limit application of the **FLR** to the area of the existing Provincial Forest Reserves (PFR) to maintain flexibility in Crown land availability for site specific agriculture, settlement and commercial uses.